

FIG. 1

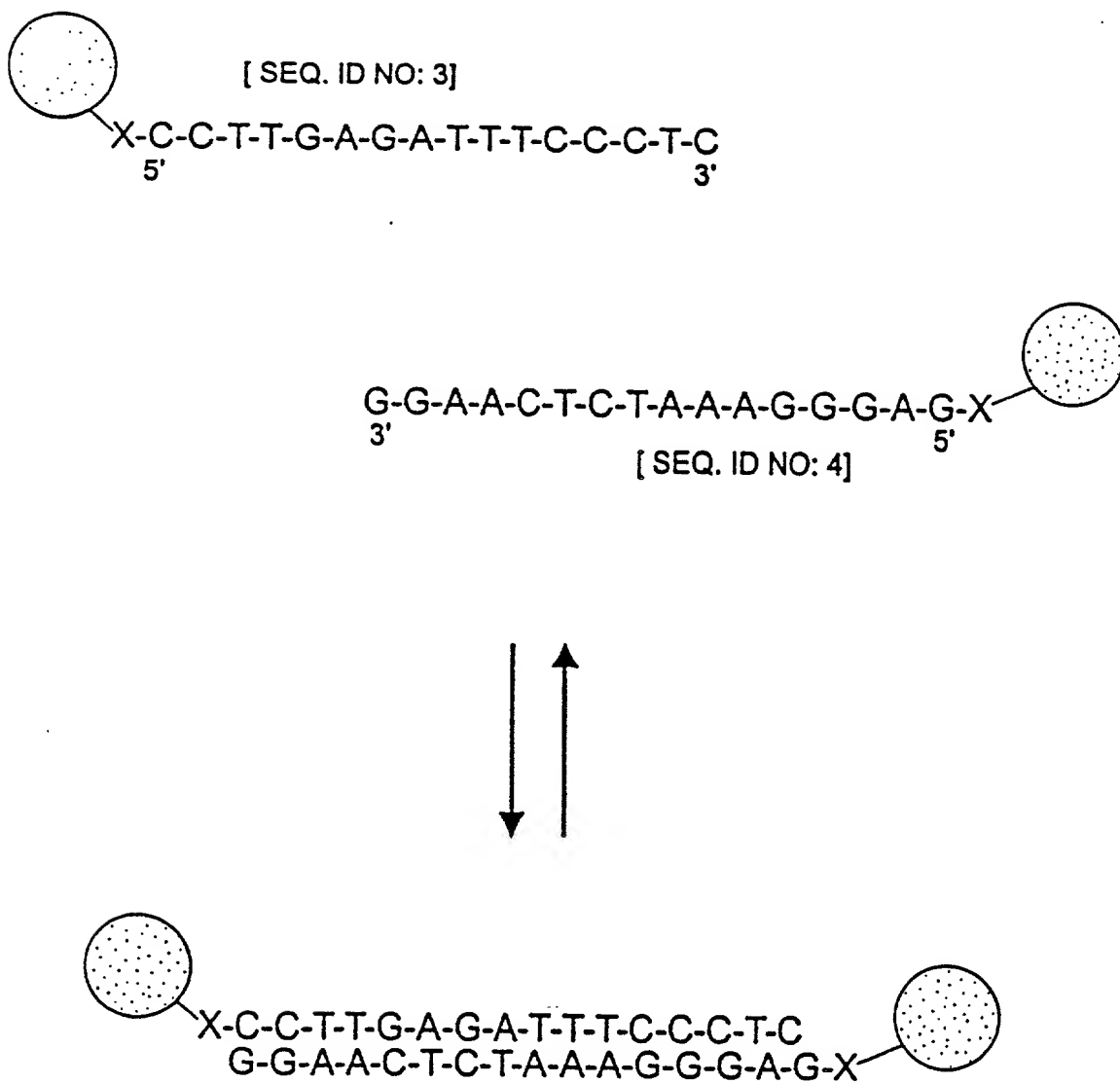


FIG.2

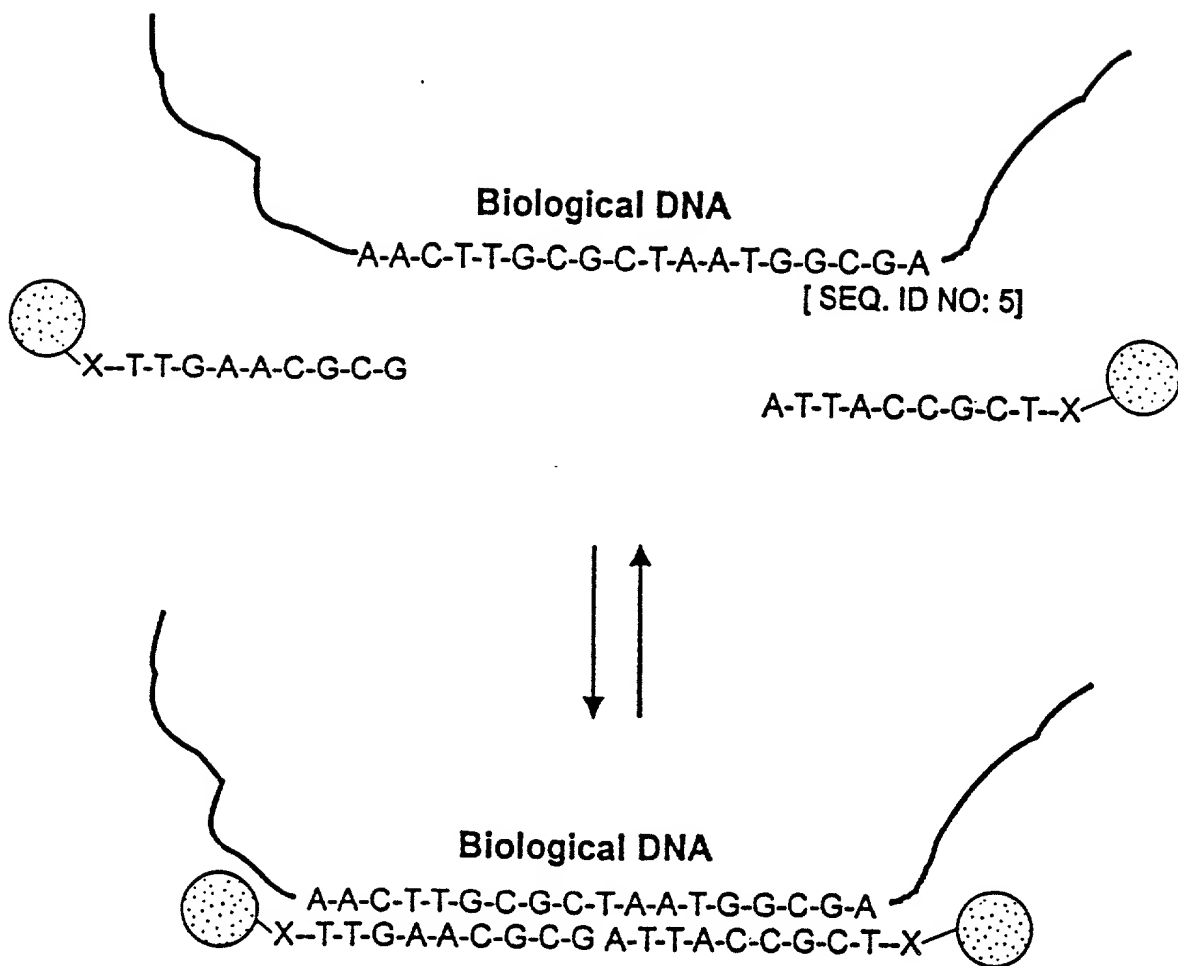


FIG.3

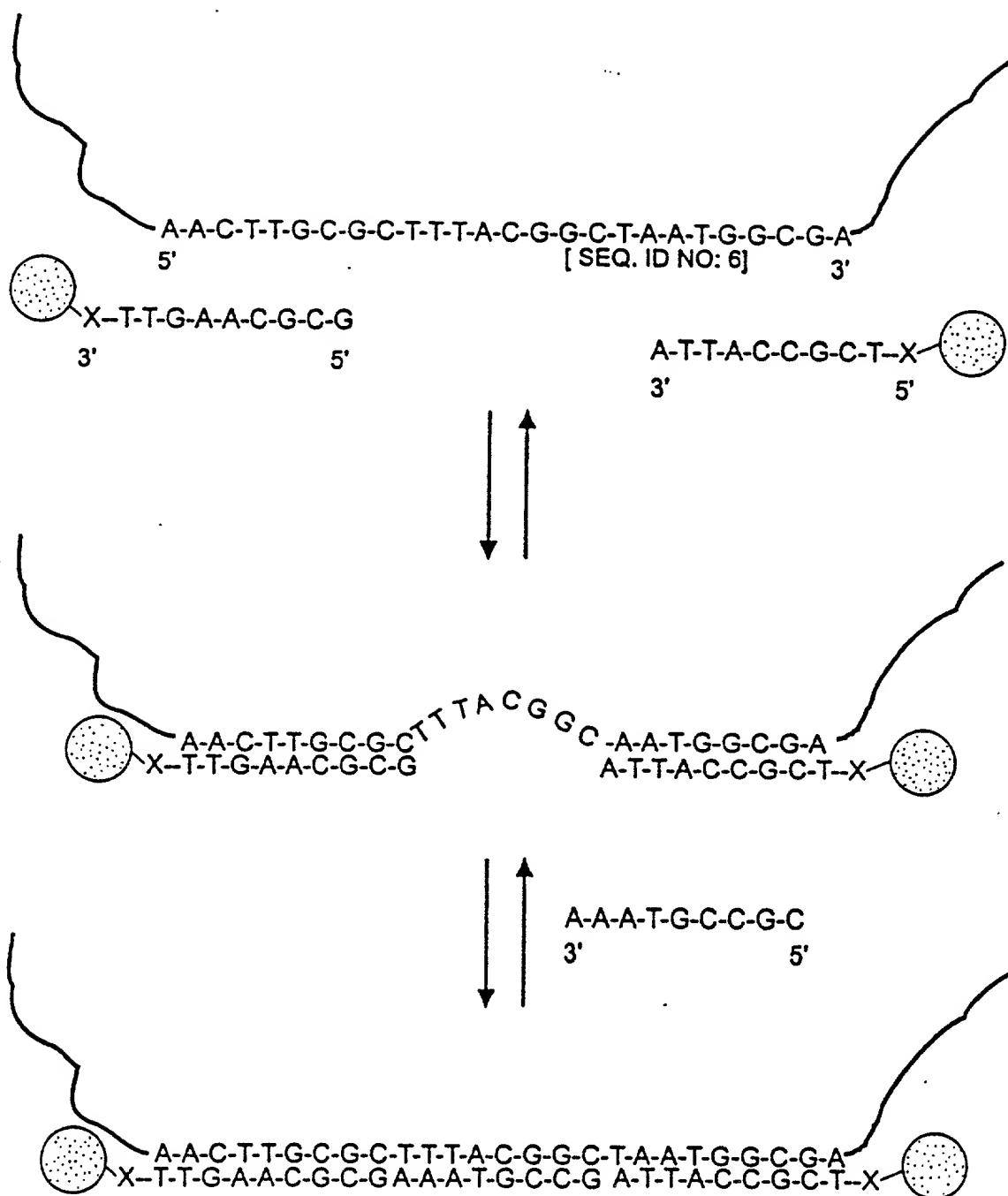


FIG. 4

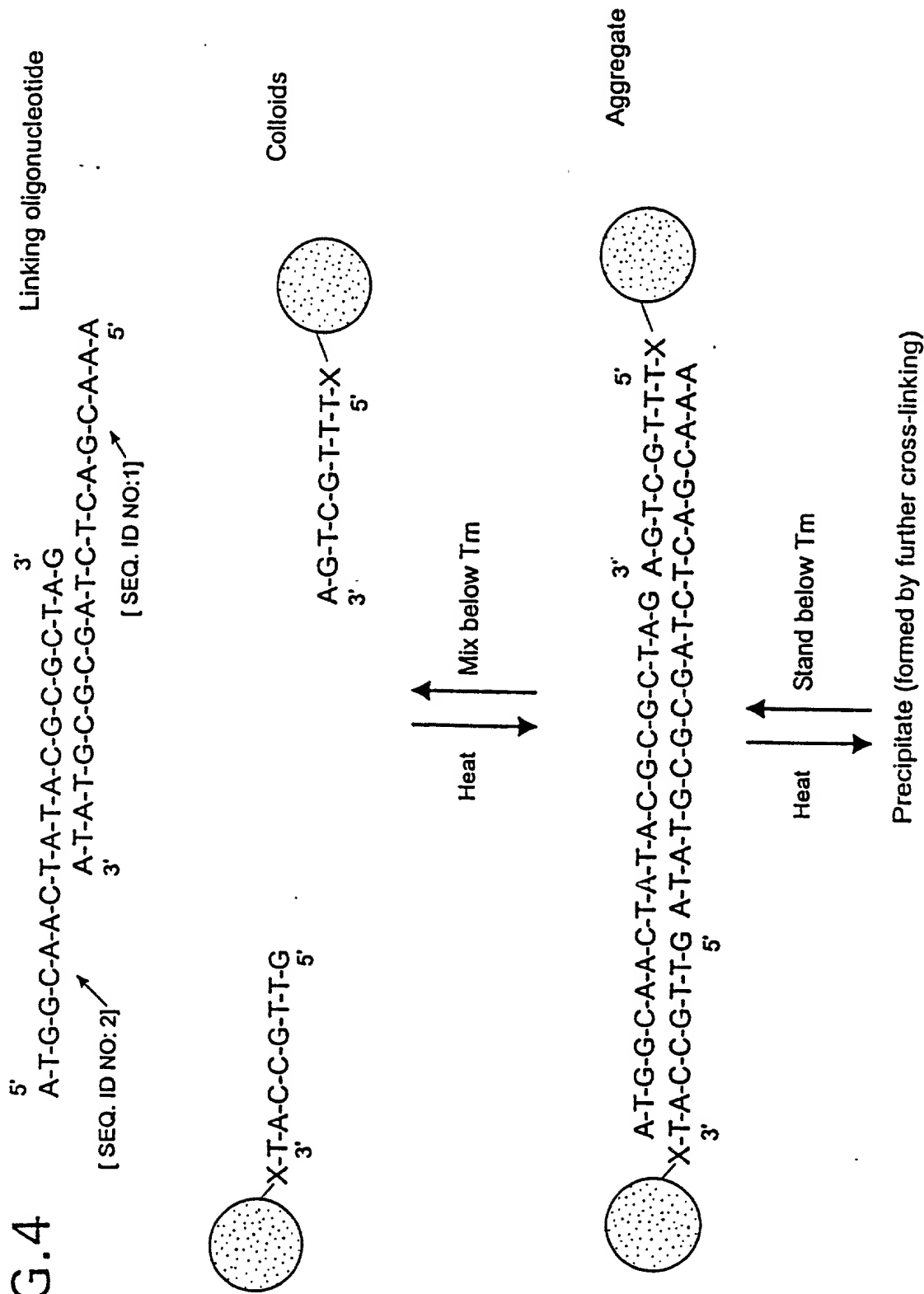


FIG.5

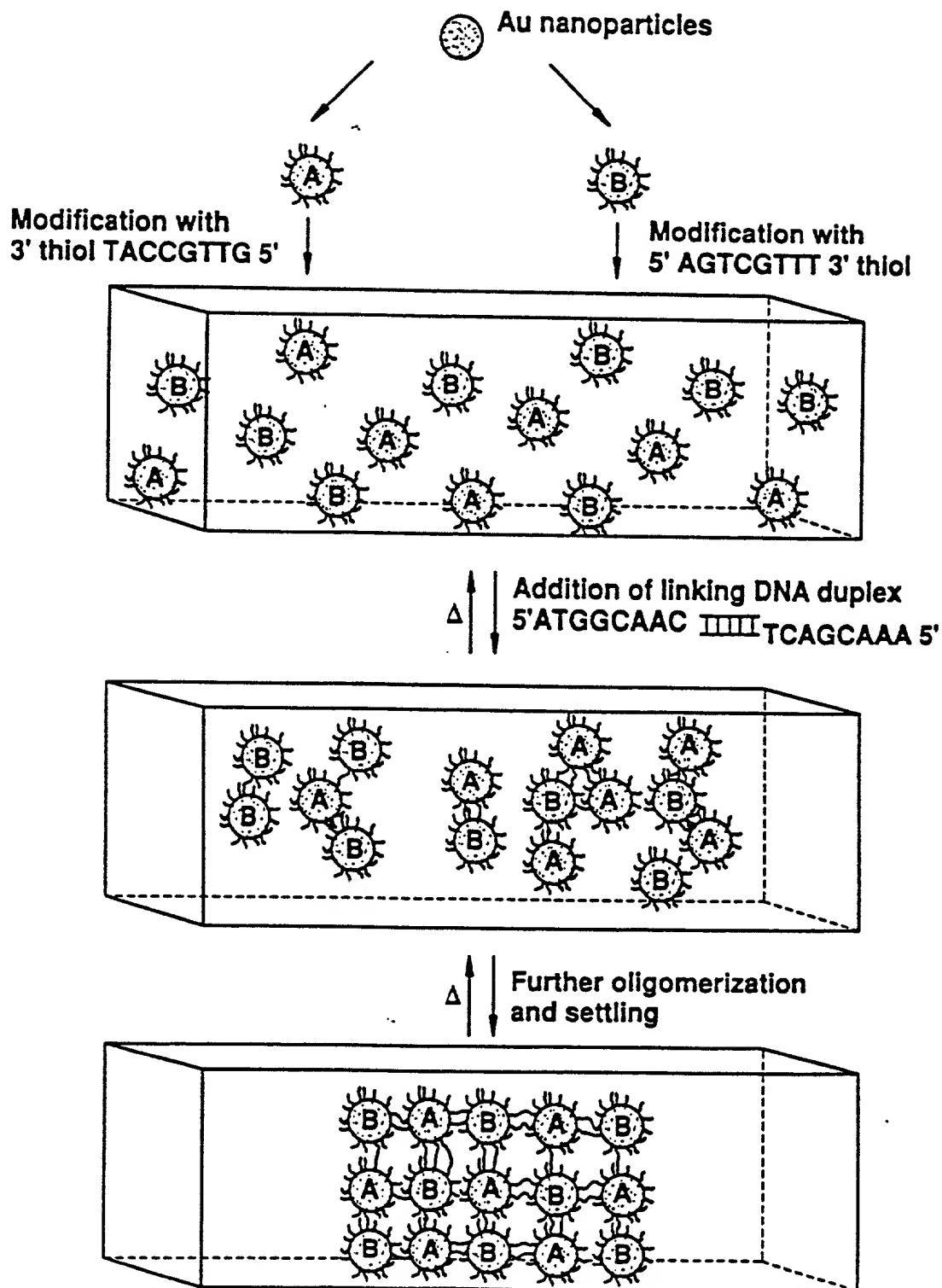




FIG. 6A FIG. 6B FIG. 6C

FIG.7

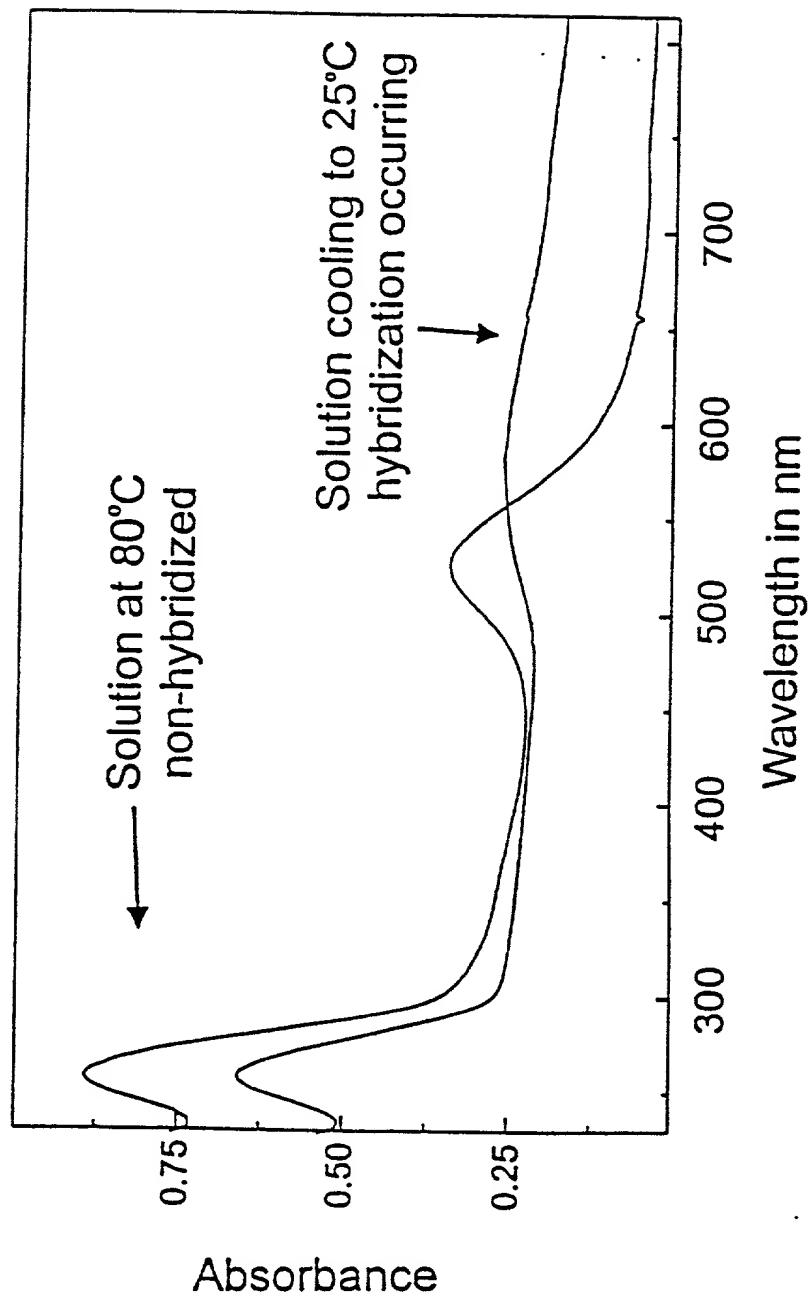


FIG. 8A

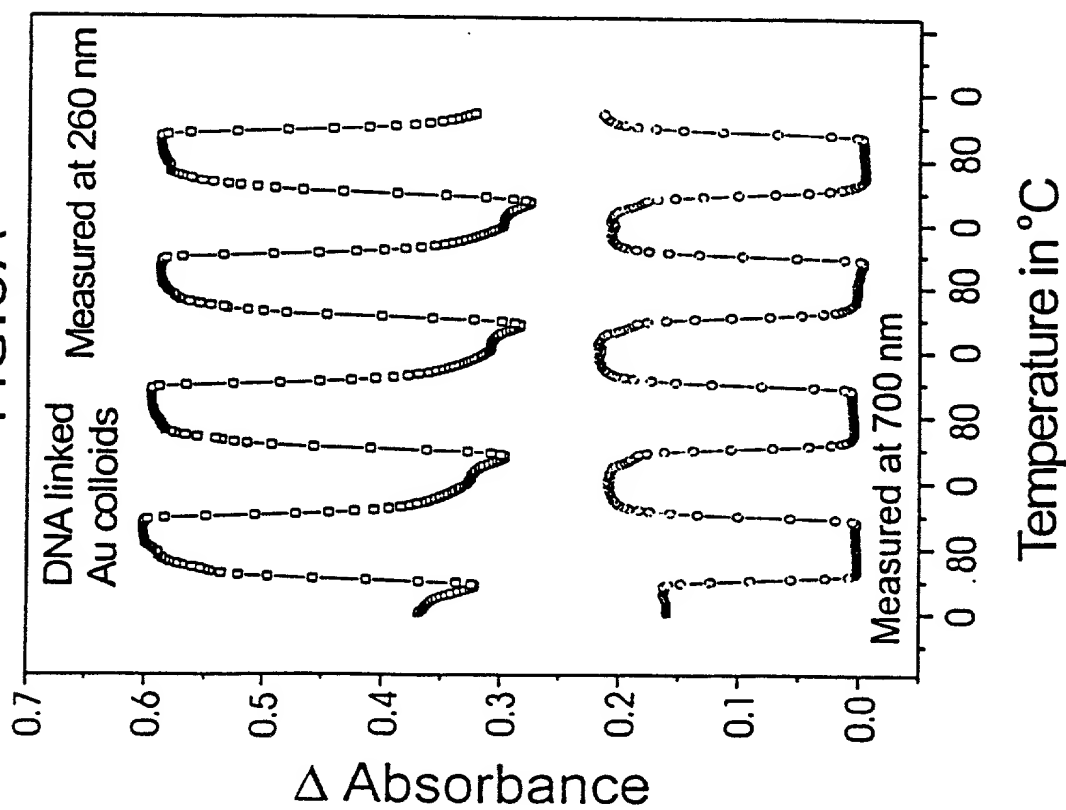


FIG. 8B

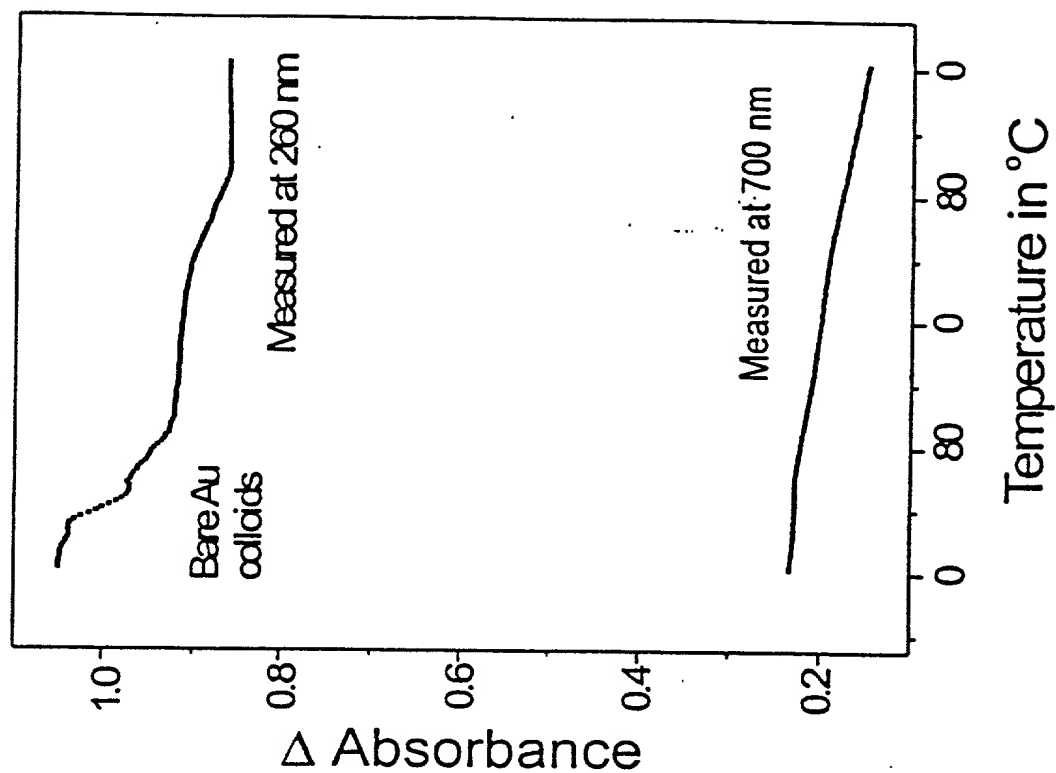






FIG.9A

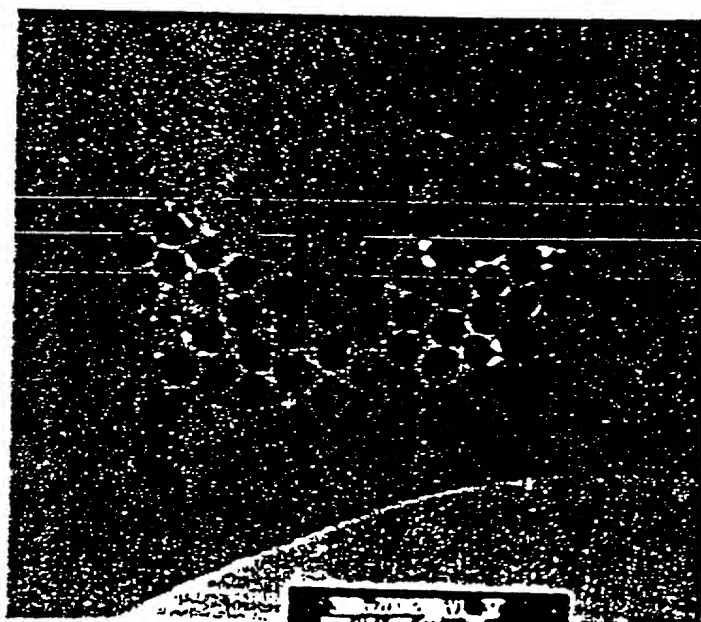


FIG.9B

FIG. 10

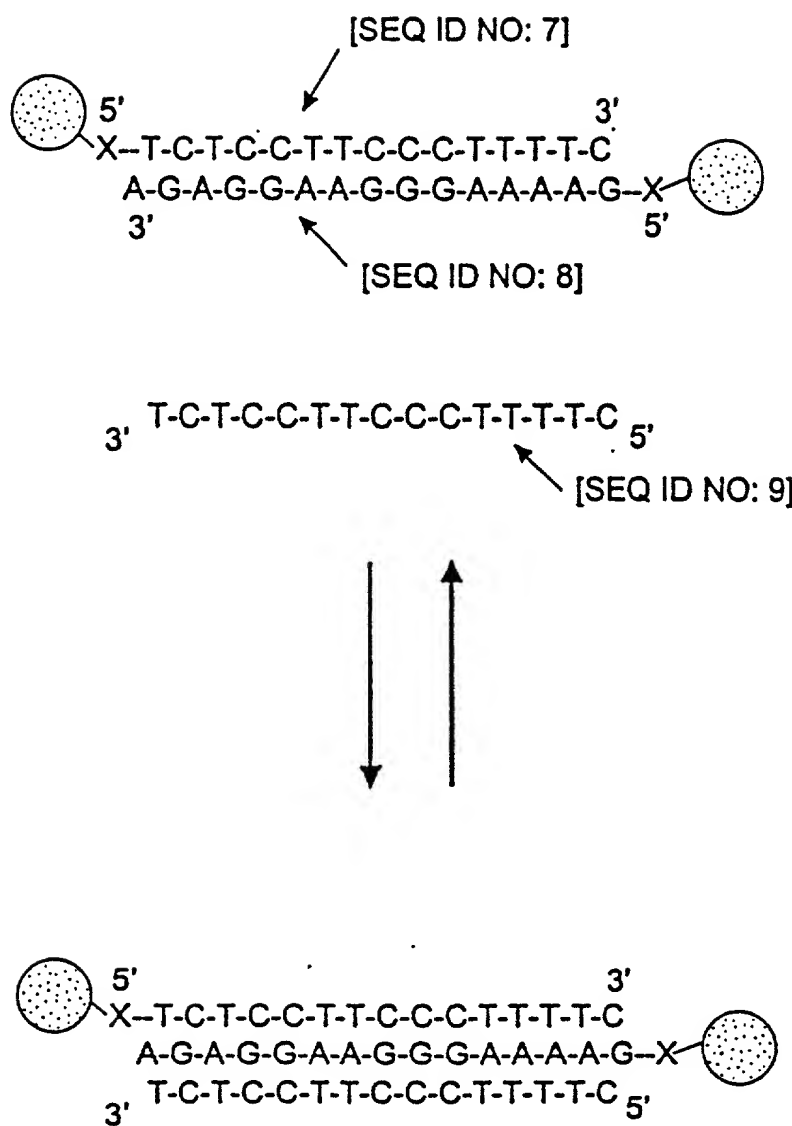
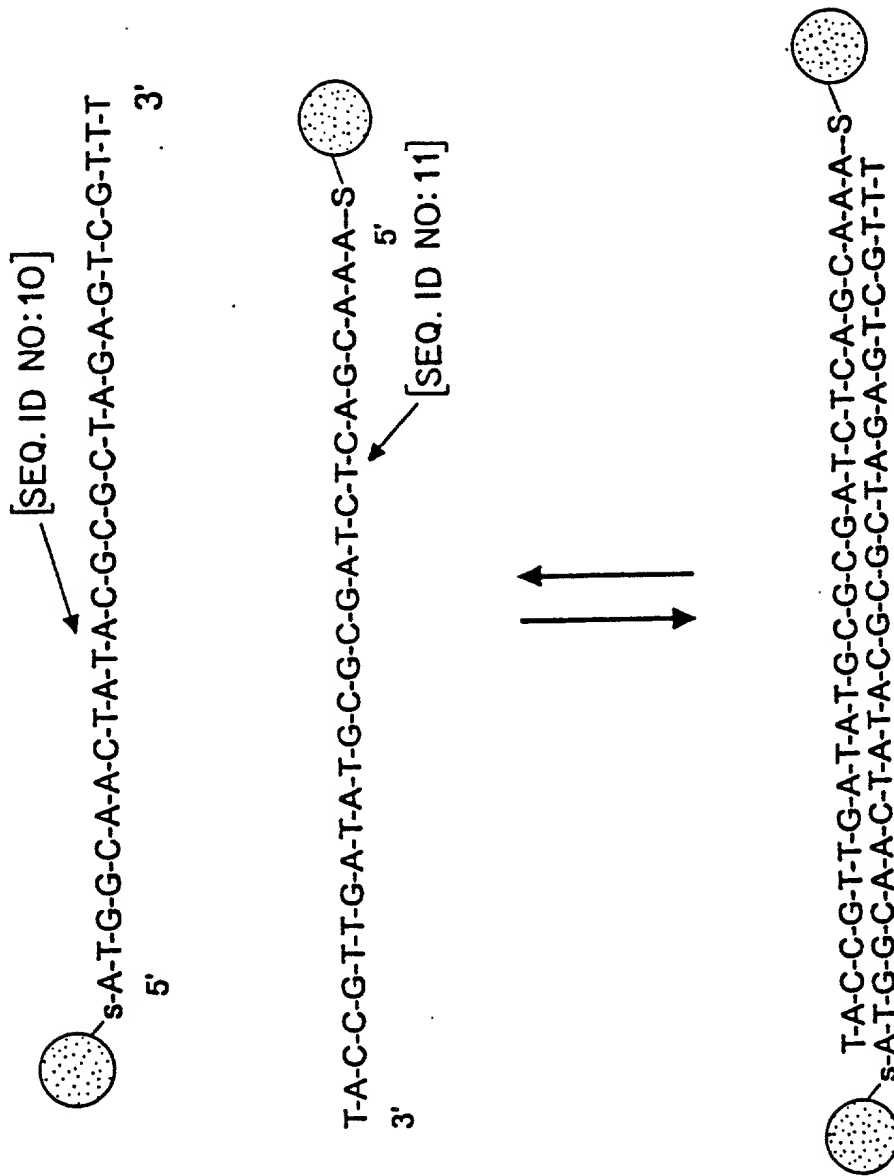


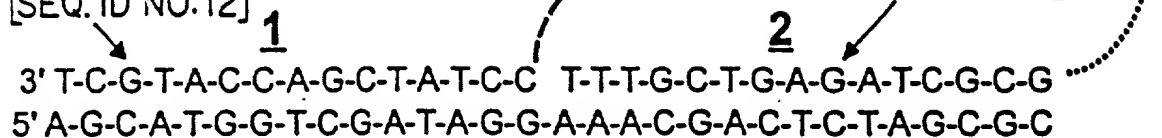
FIG. 11



# FIG. 12A

Complementary Target

[SEQ. ID NO:12]



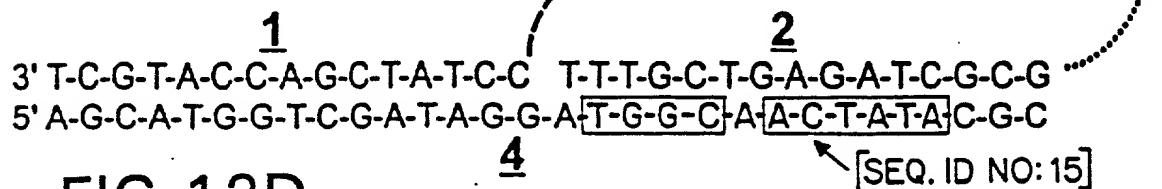
# FIG. 12B

Probes without Target



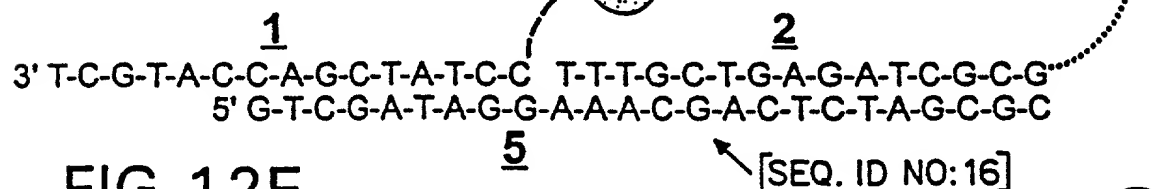
# FIG. 12C

Half Complementary Target



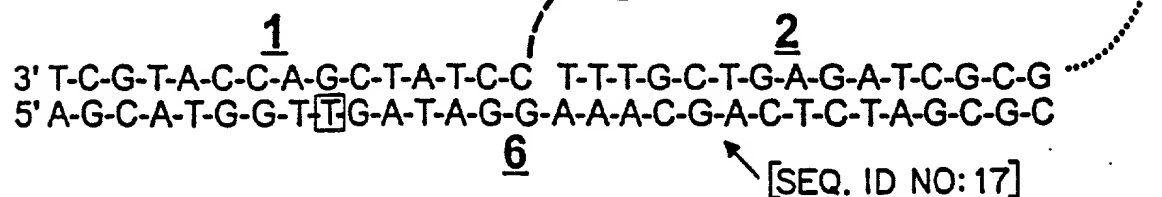
# FIG. 12D

Target - 6 bp



# FIG. 12E

One bp Mismatch



# FIG. 12F

Two bp Mismatch

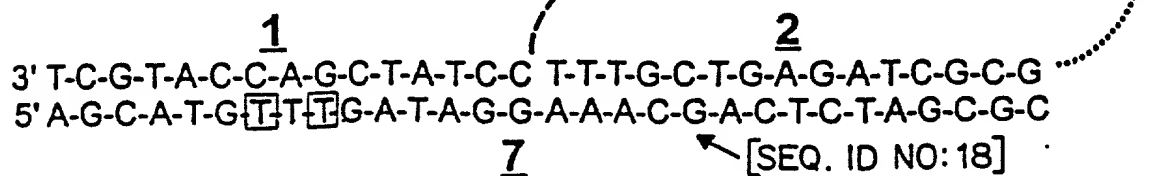


FIG.13A

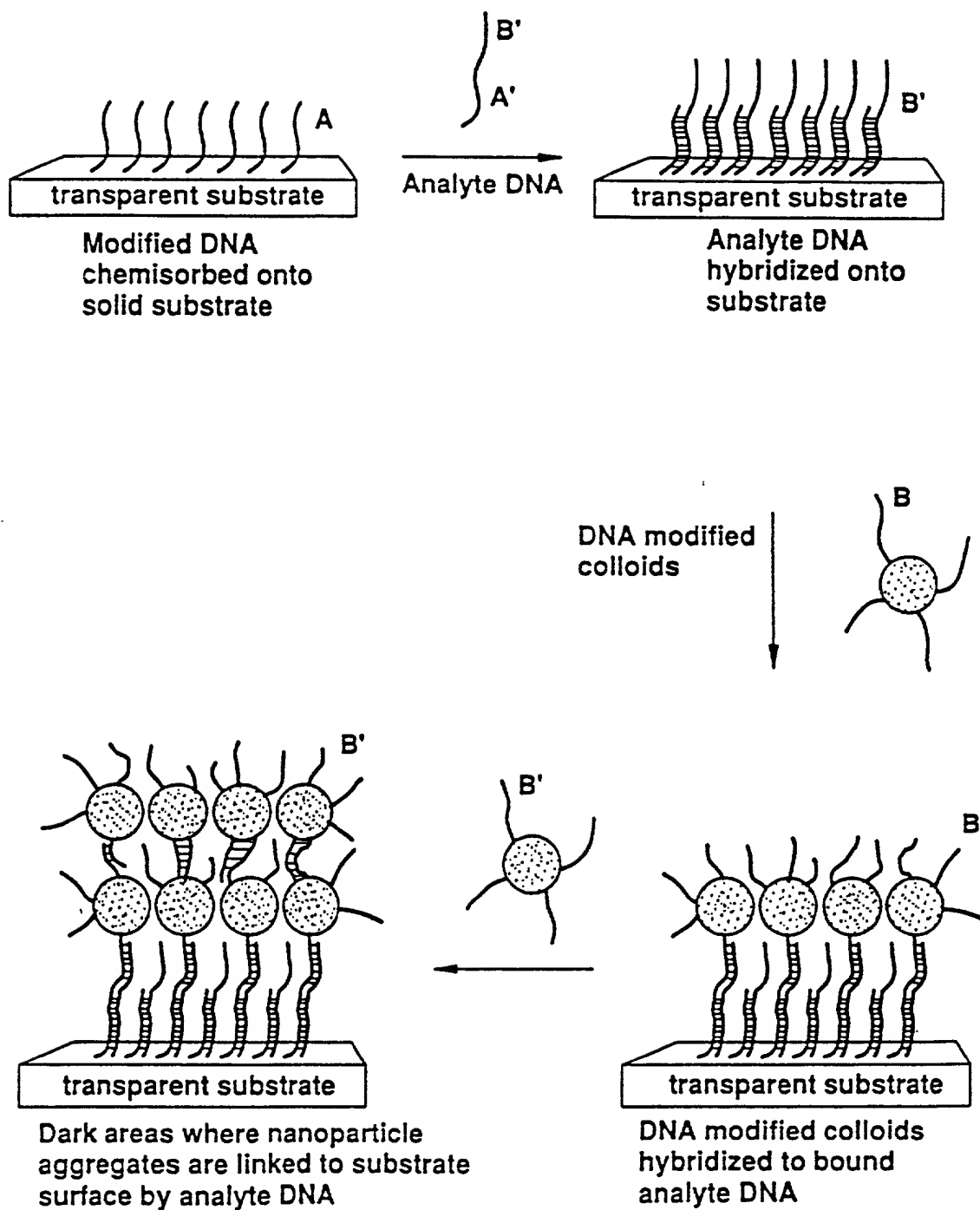


FIG.13B

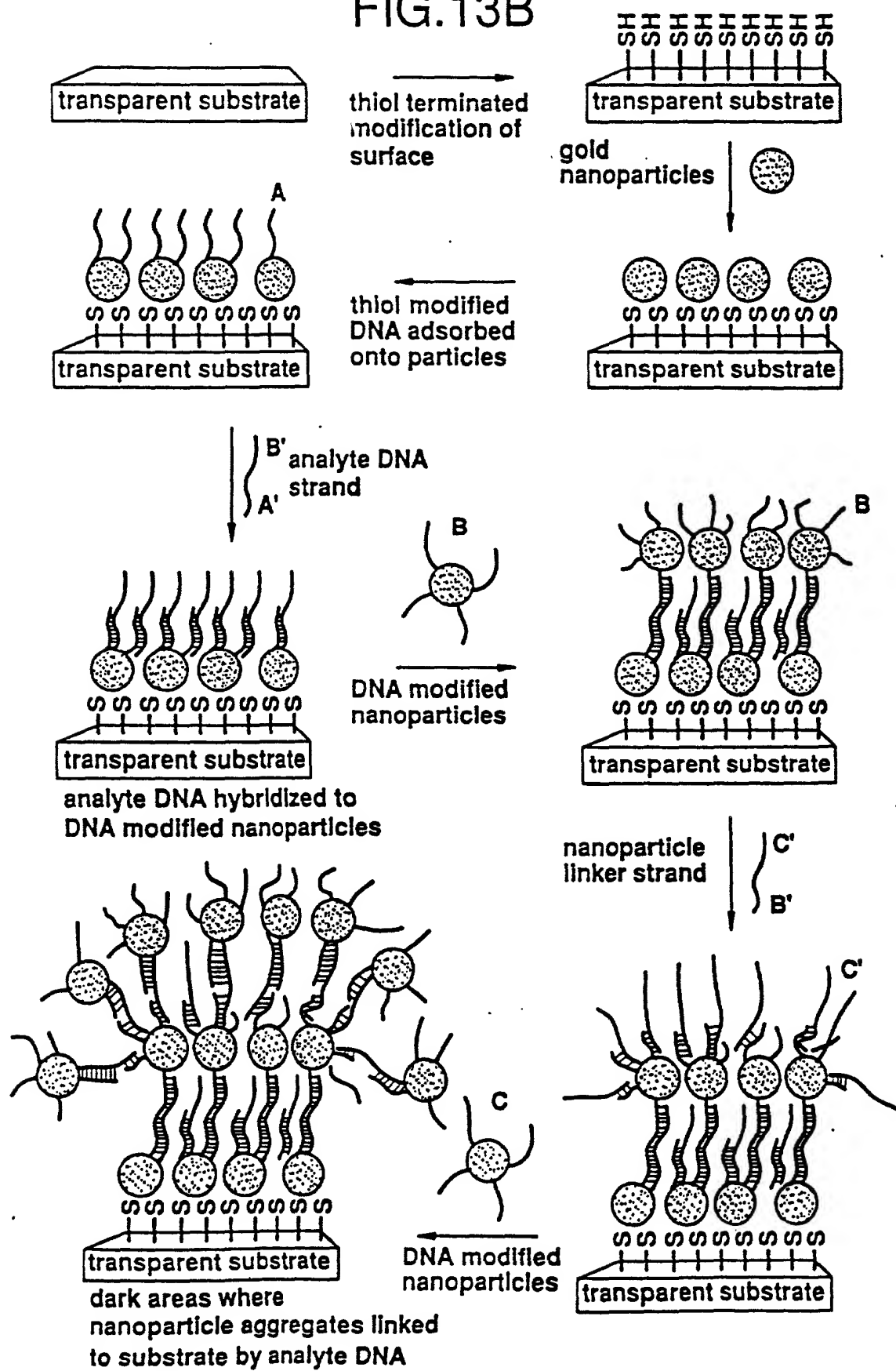


FIG.14A

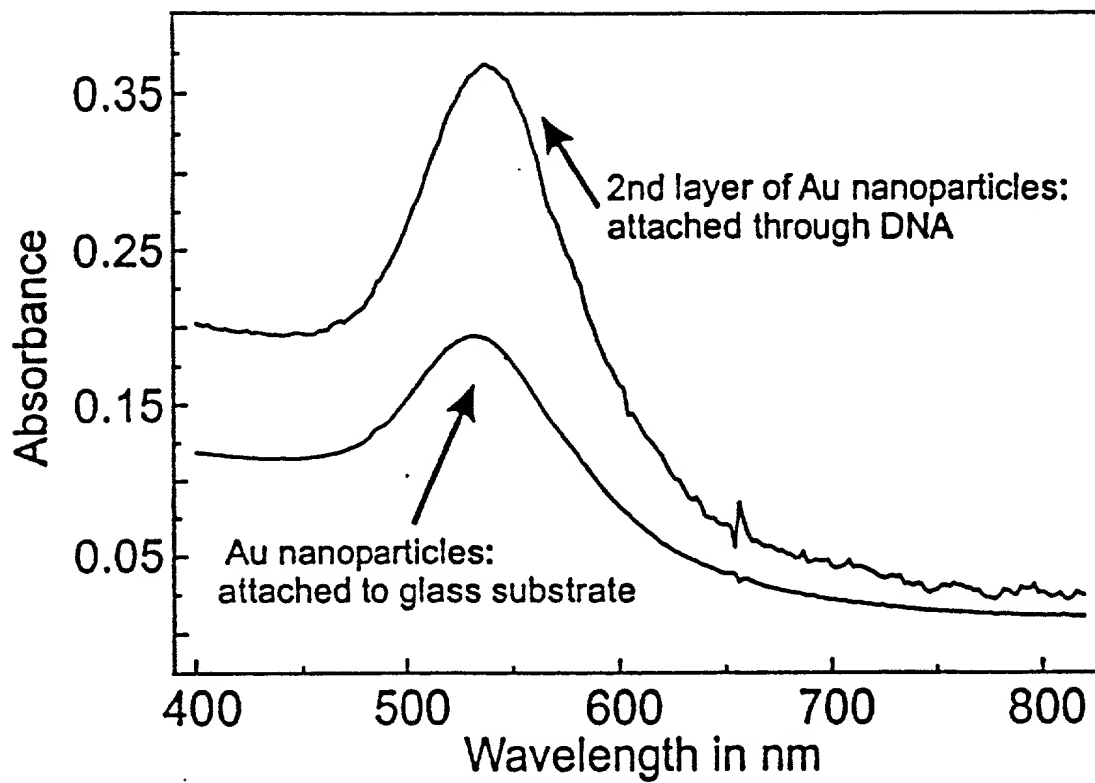
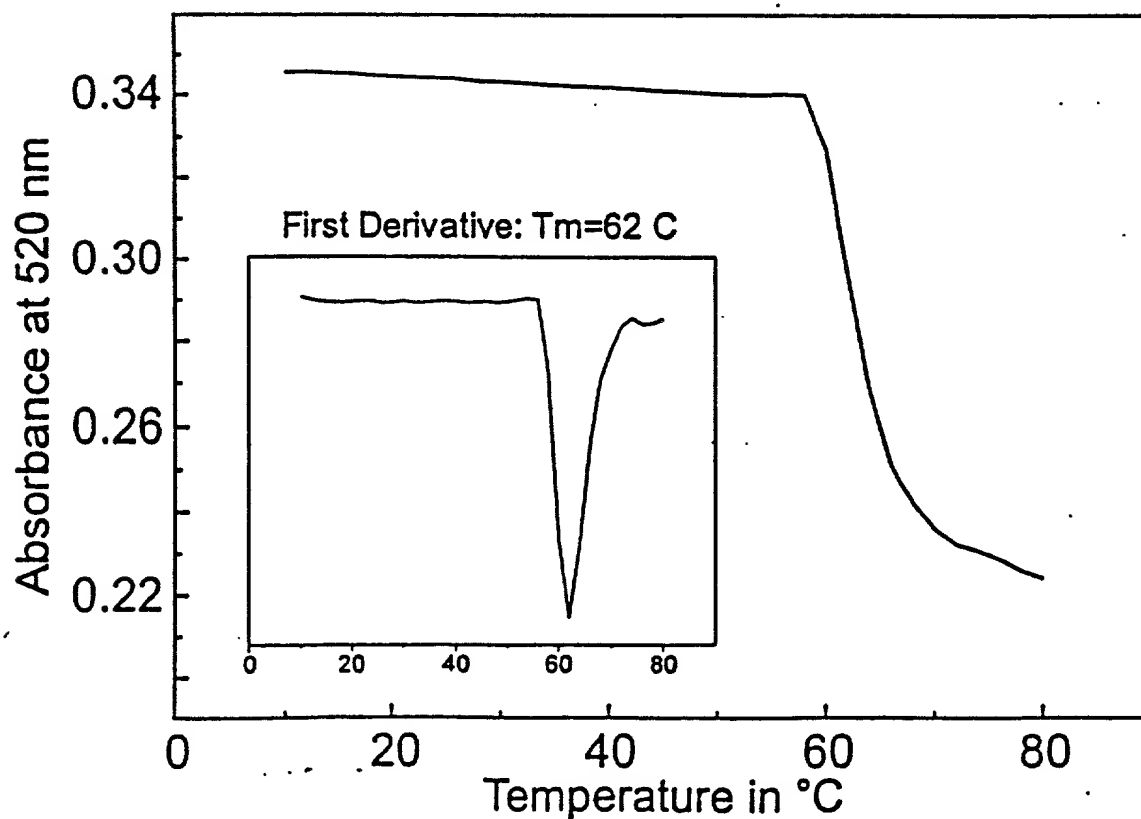
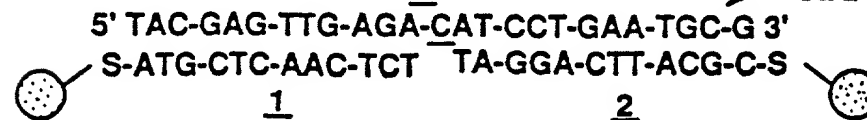


FIG.14B







# FIG. 16A

## 24 Base Template

5' TAC-GAG-TTG-AGA-ATC-CTG-AAT-GCG 3'  
 —S-ATG-CTC-AAC-TCT TAG-GAC-TTA-CGC-S —  
 1 2

# FIG. 16B

## 48 Base Template with Complementary 24 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-ATC-CTG-AAT-GCG 3'  
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT TAG-GAC-TTA-CGC-S —  
 1 2

# FIG. 16C

## 72 Base Template with Complementary 48 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-TAT-ATT-GGA-CGC-TTT-ACG-GAC-AAC-ATC-CTG-AAT-GCG 3'  
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT-ATA-TAA-CCT-GCG-AAA-TGC-CTG-TTG TAG-GAC-TTA-CGC-S —  
 1 2

FIG. 17A

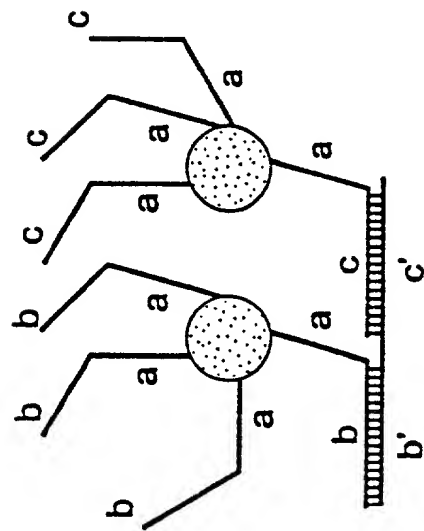


FIG. 17B

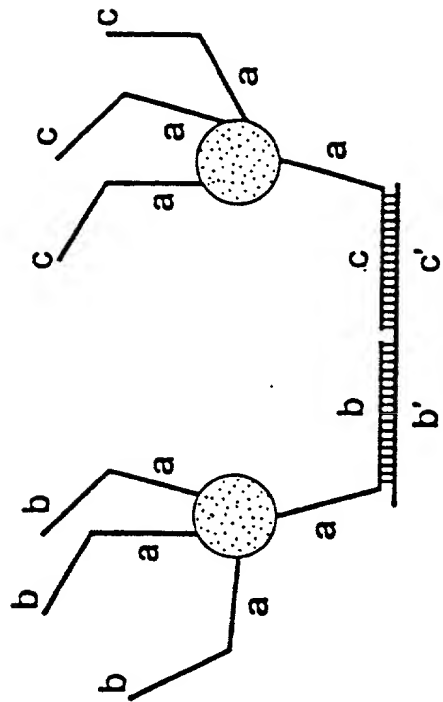


FIG. 17C

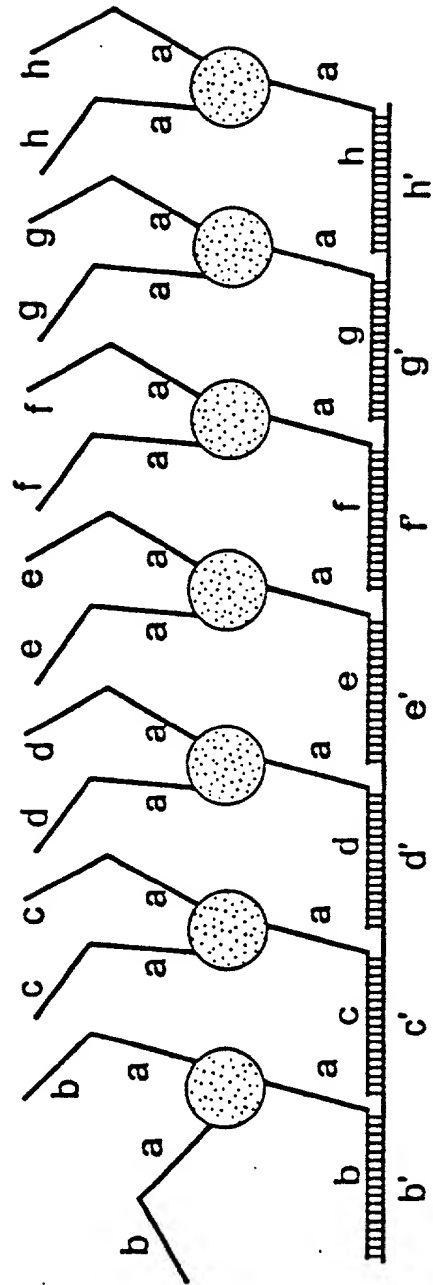


FIG.17D

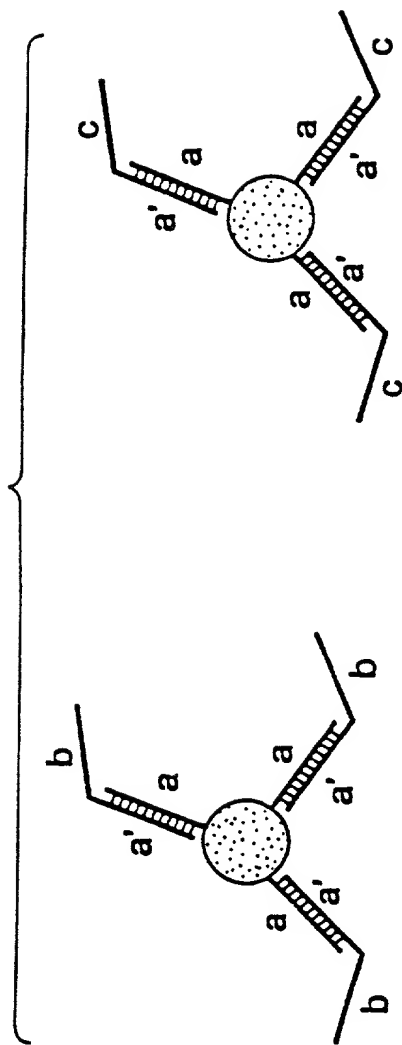


FIG.17E

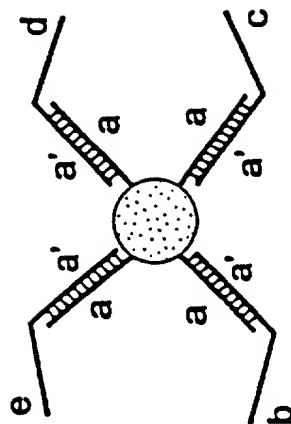


FIG.18

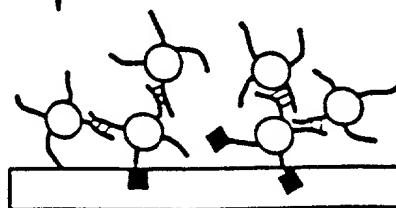
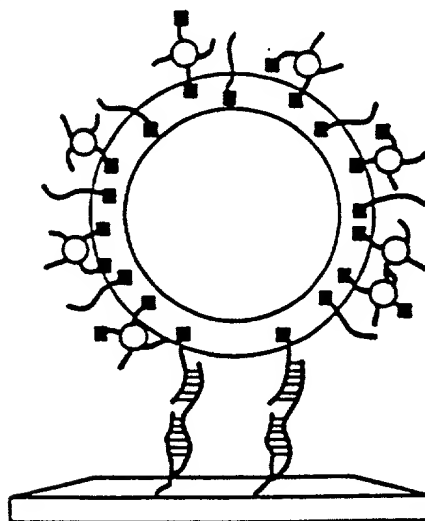
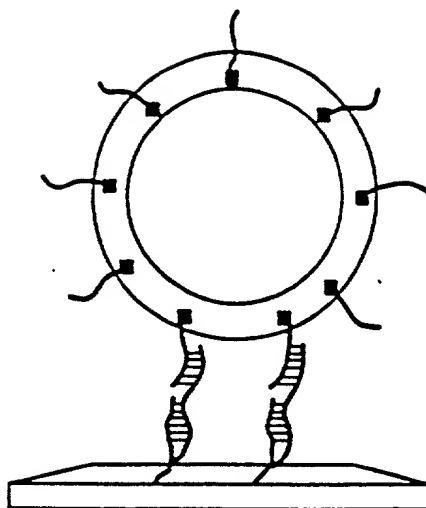


FIG.19A

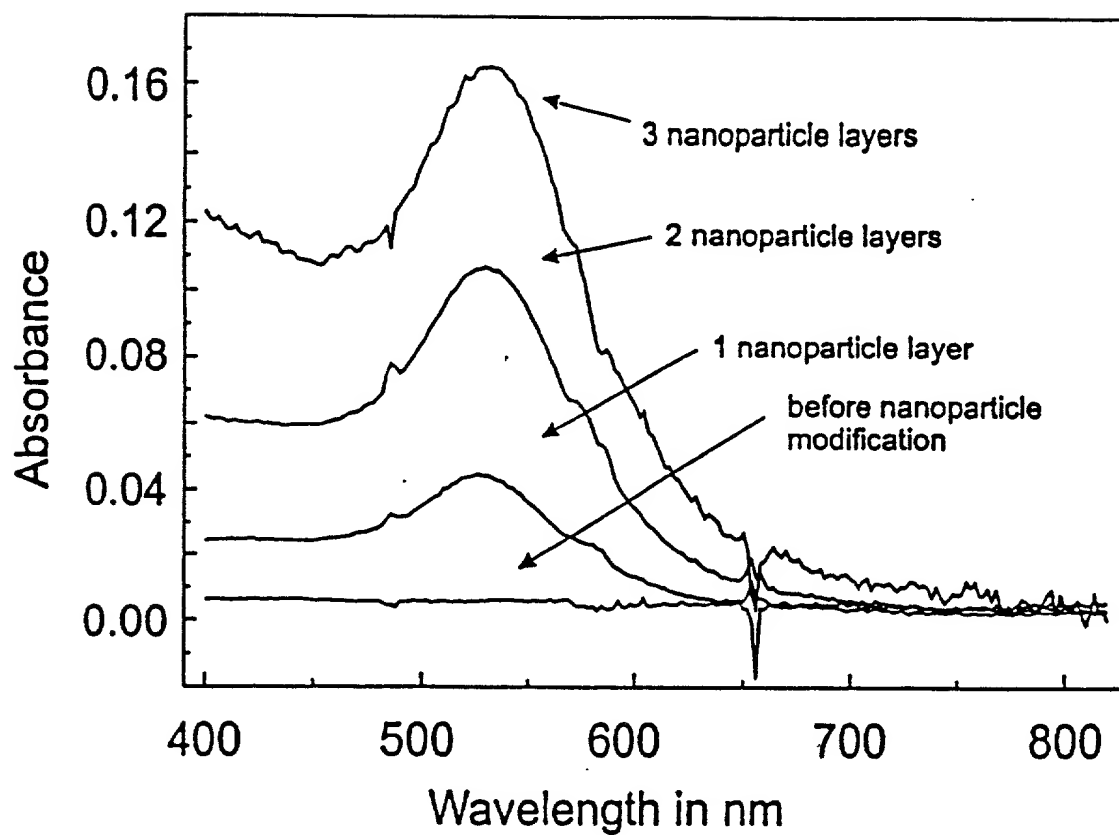


FIG.19B

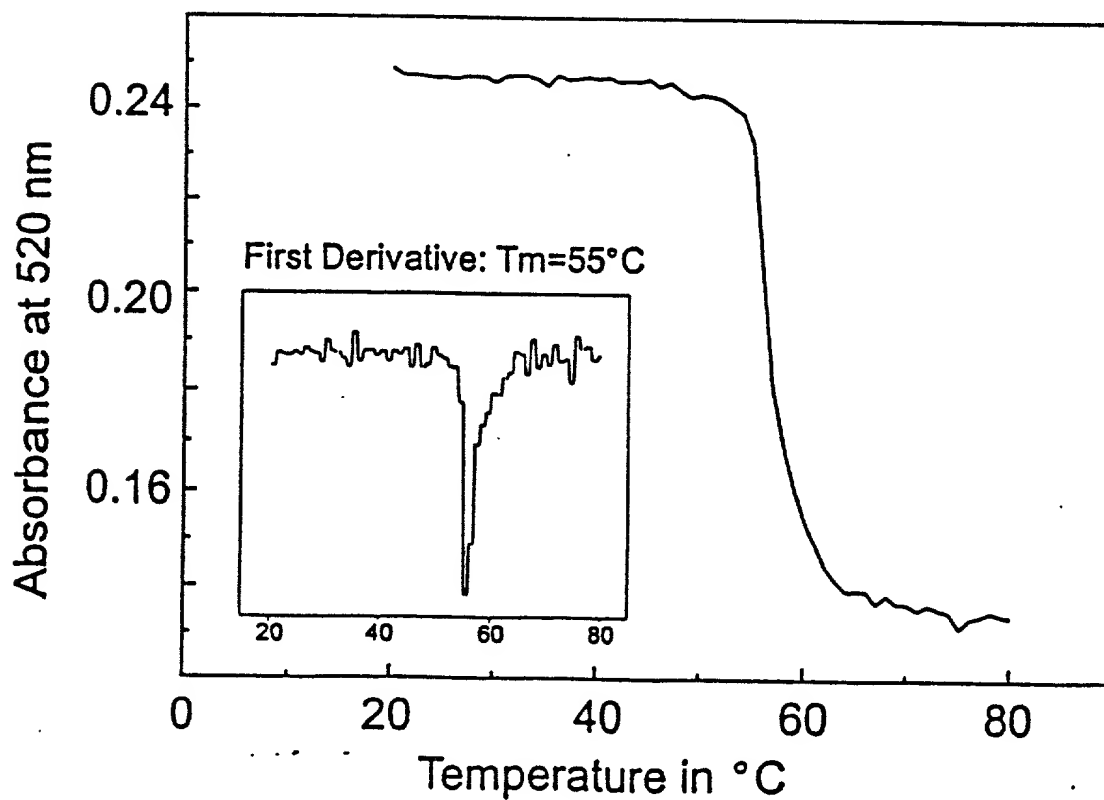


FIG.20A

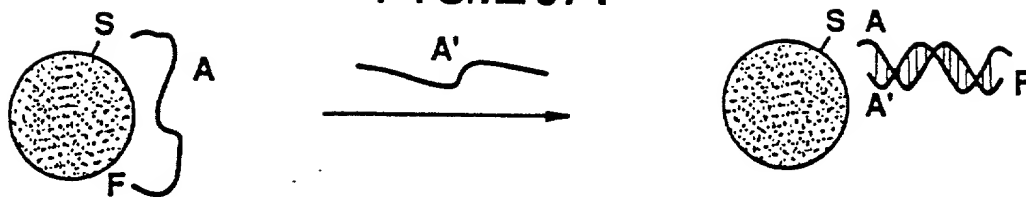
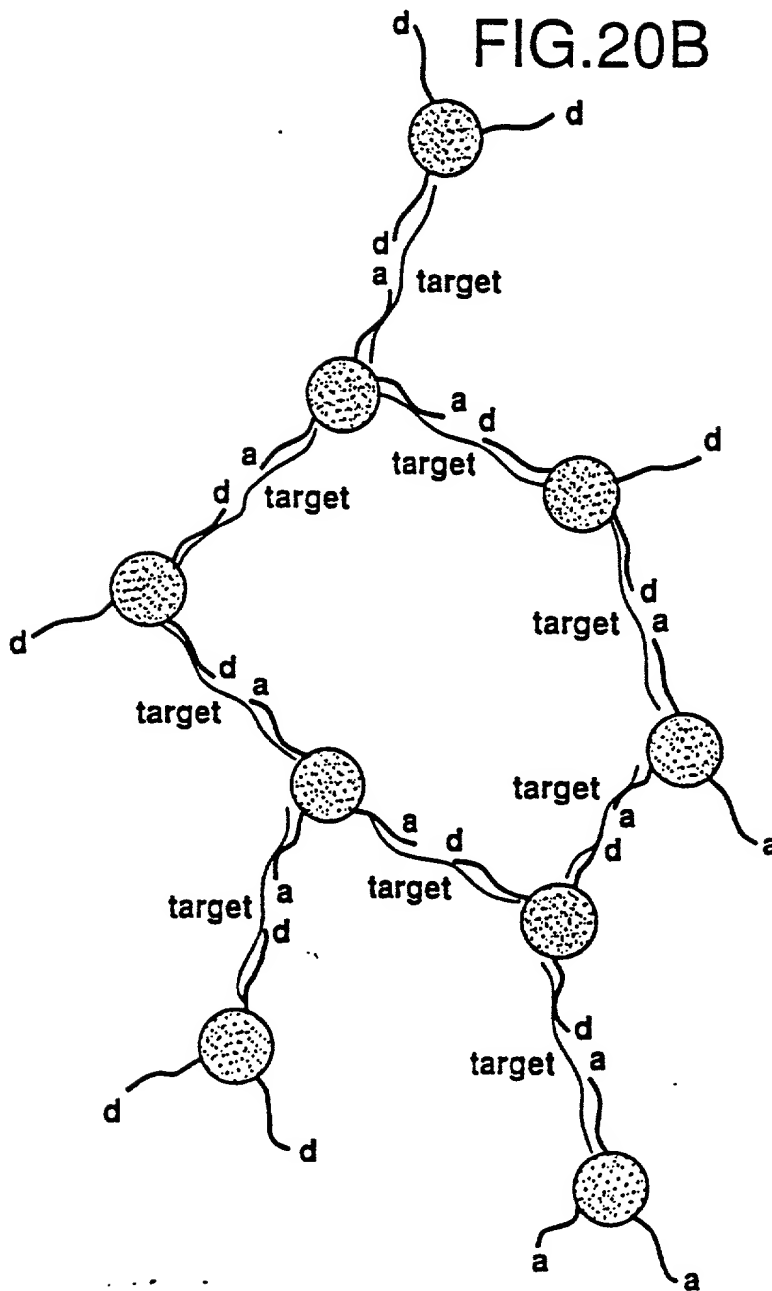
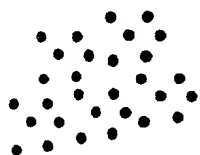


FIG.20B

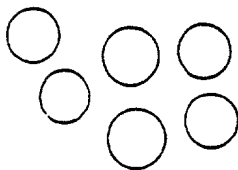


Oligonucleotide  
modified Au  
nanoparticle probes



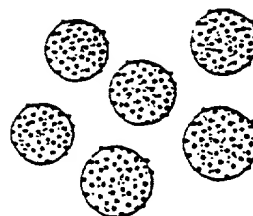
Red

Fluorophore labeled  
oligonucleotide modified  
latex probes



White/Fluorescent

Au/Latex hybrid

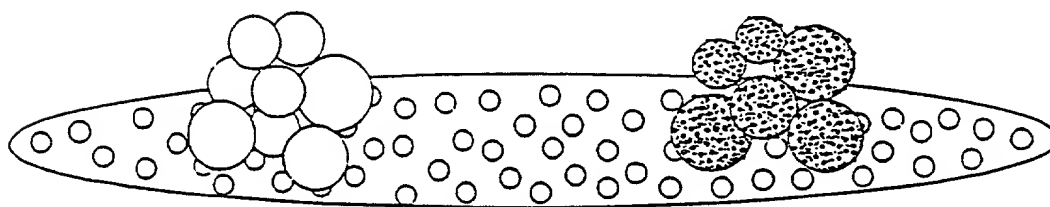


Pink/Non-fluorescent

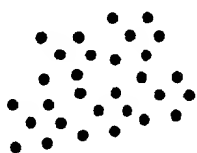
Target  
Oligonucleotide

No Target  
Oligonucleotide

Target  
Oligonucleotide



All Au probes pass  
through membrane

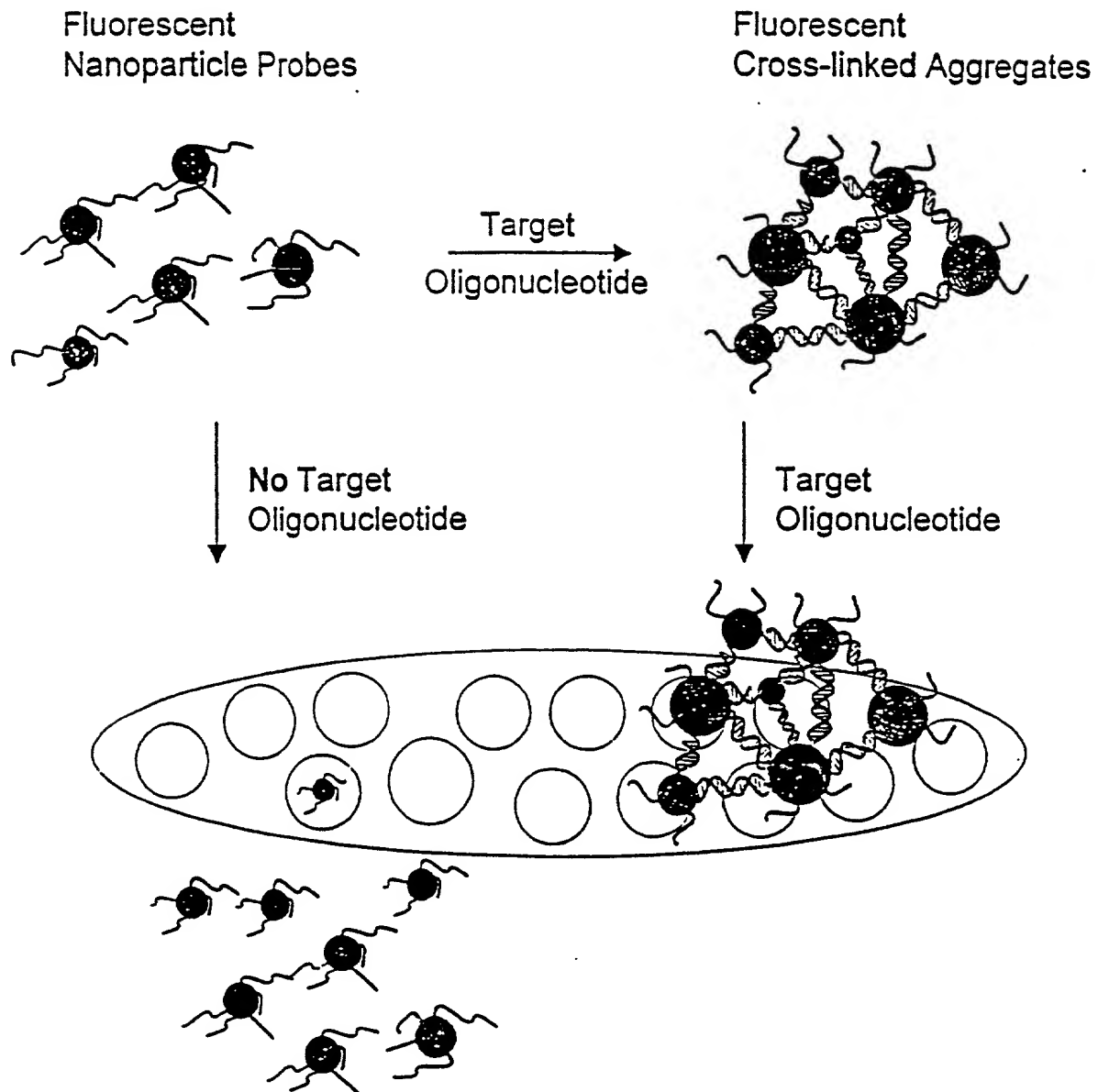


Excess Au probes  
pass through  
membrane



FIGURE 21

FIGURE 22



The fluorescent nanoparticle probes pass through the membrane

The fluorescent cross-linked aggregates are retained by the membrane



## Anthrax PCR Product

5'G GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA GTA ATT AAT  
3'C CGC CTA CTC AGT CAT CAA TTC CTC CGA GTA TCT CTT CAT TAA TTA

TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT ATA AGA AAA  
AGC AGT TGT CTC CCT AAT AAC AAT TTA TAA CTA TTC CTA TAT TCT TTT

ATA TTA TCC AGG GTT ATA TTG TAG AAA TTG AAG ATA CTG AAG GGC TT 3'  
TAT AAT AGG TCC CAA TAT AAC ATC TTT AAC TTC TAT GAC TTC CCG AA 5'

141 mer Anthrax PCR product [SEQ ID NO:36]



3' CTC CCT AAT AAC AAT

[SEQ ID NO:37]



3' TTA TAA CTA TTC CTA

[SEQ ID NO:38]

Oligonucleotide-Nanoparticle Probes

### Blocker Oligonucleotides

3' C CGC CTA CTC AGT CAT CAA TTC CTC CGA GT	[SEQ ID NO:39]
3' A TCT CTT CAT TAA TTA AGC AGT TGT	[SEQ ID NO:40]
3' TAT TCT TTT TAT AAT AGG TCC CAA TAT	[SEQ ID NO:41]
3' AAC ATC TTT AAC TTC TAT GAC TTC CCG AA	[SEQ ID NO:42]

FIGURE 23

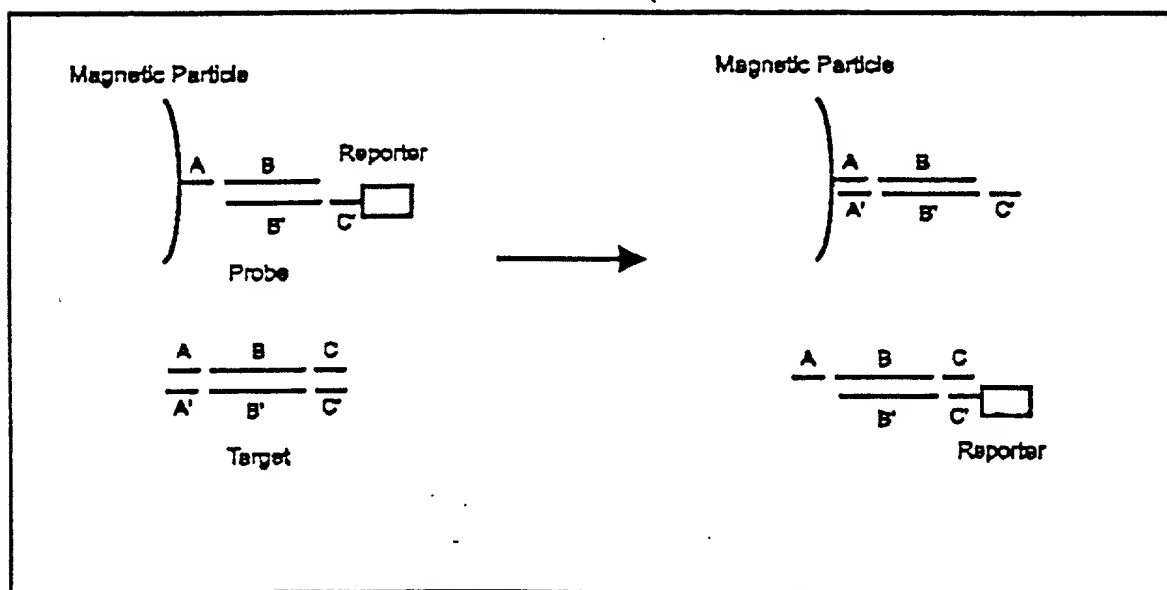
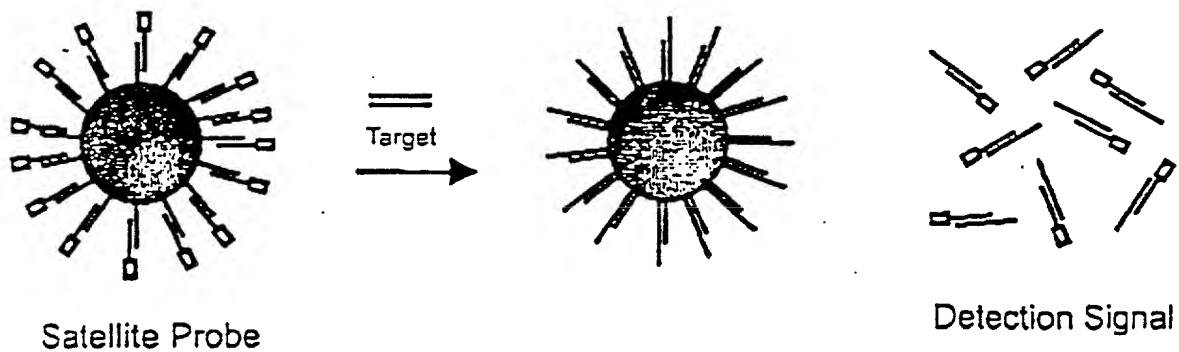


FIGURE 24

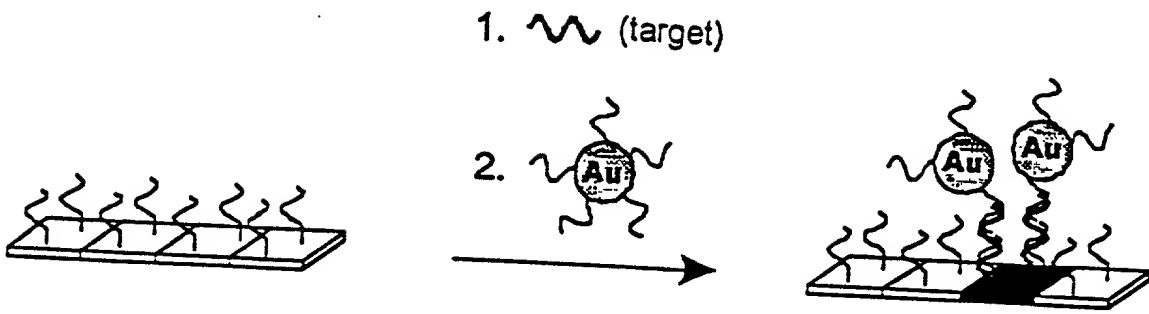


FIGURE 2.5A

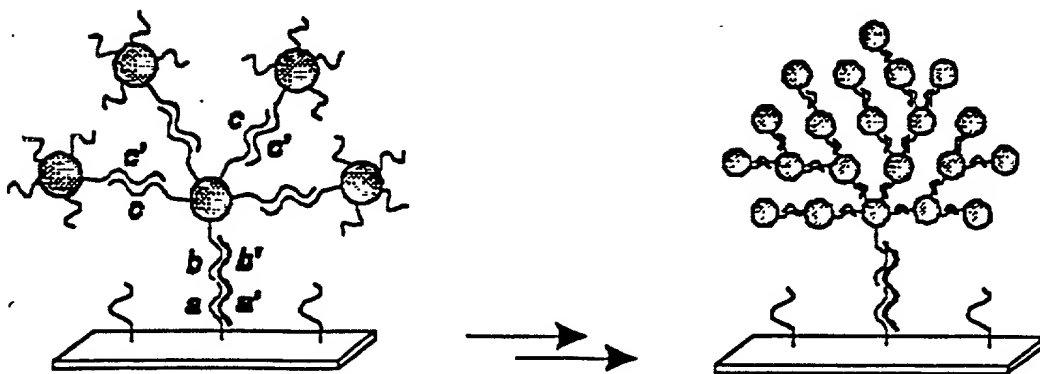
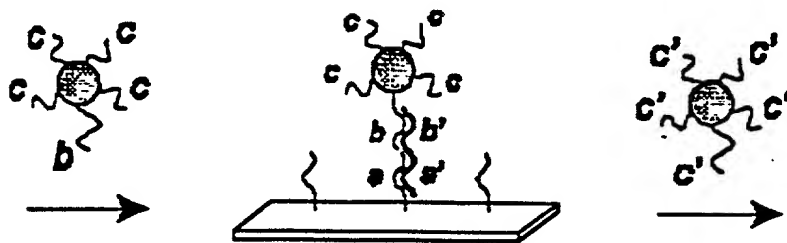
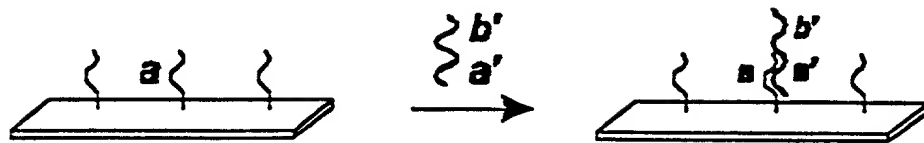
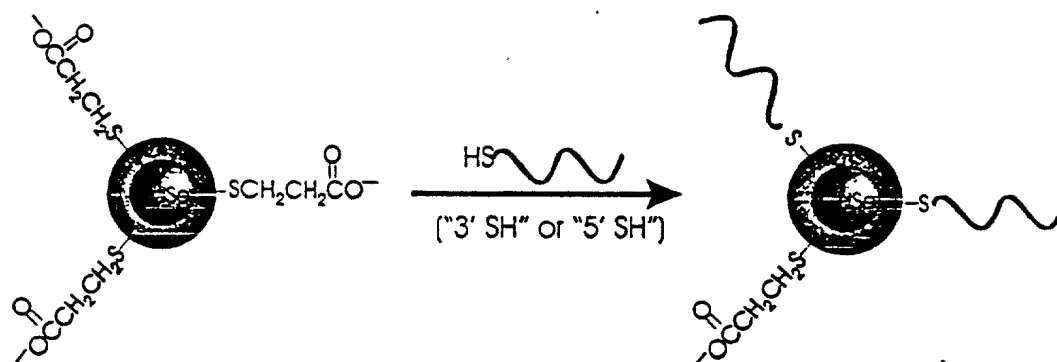


FIGURE 2.5B

A



B

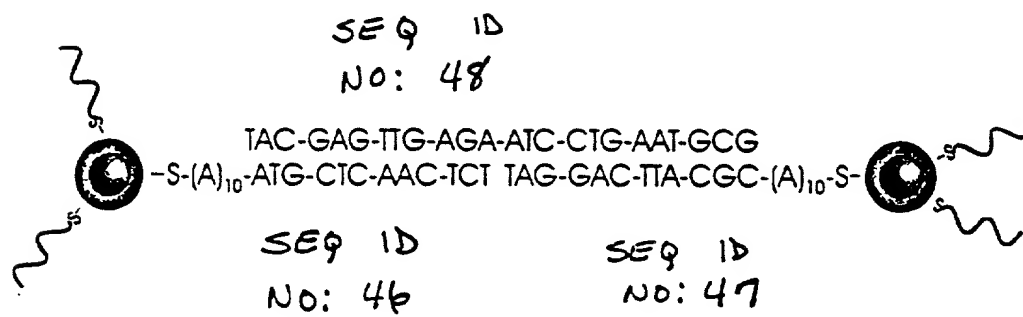


FIGURE 26

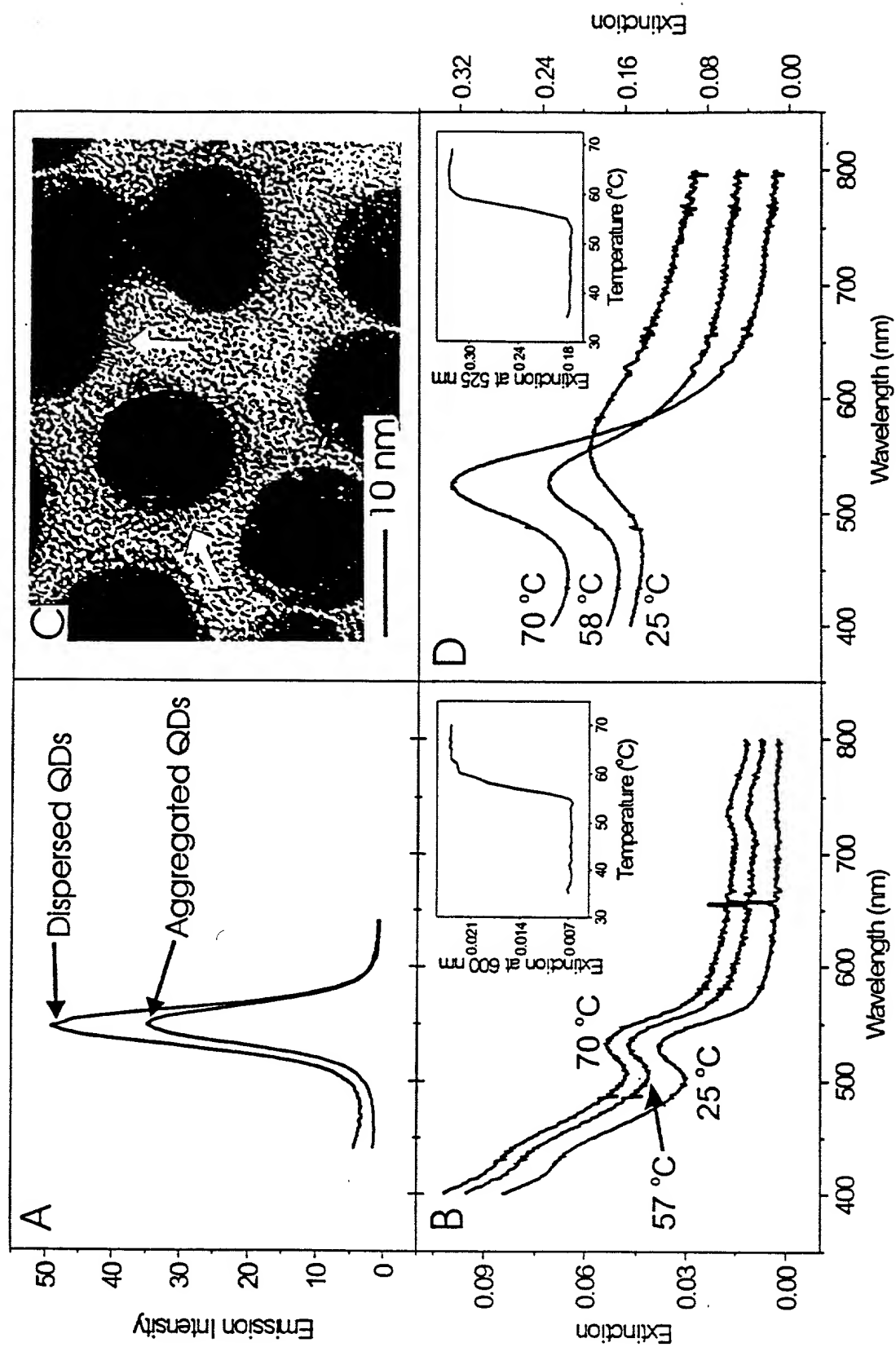


FIGURE 27

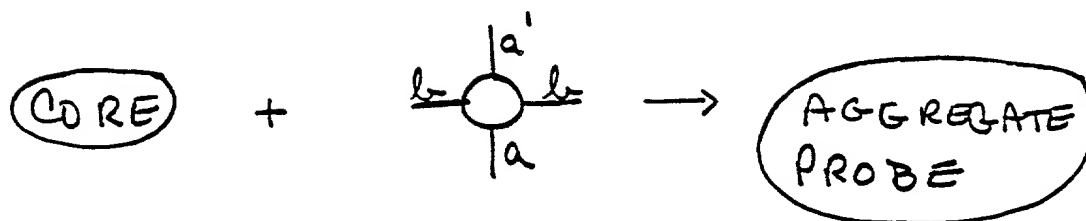
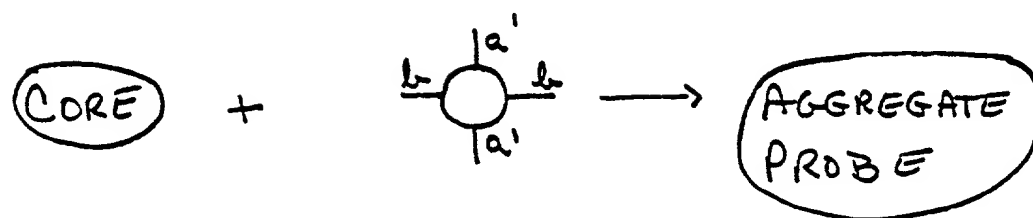
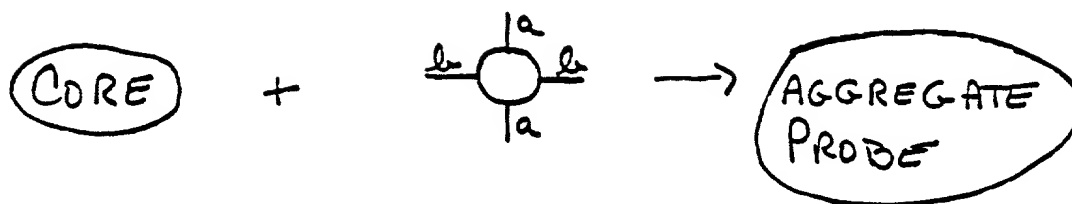
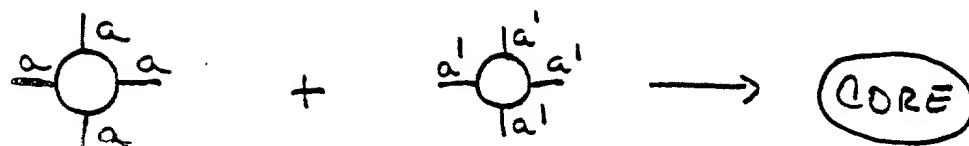


FIGURE 28A

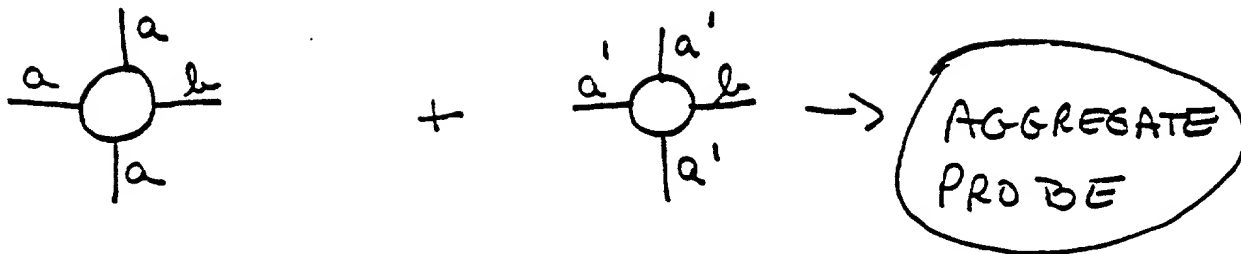


FIGURE 28B

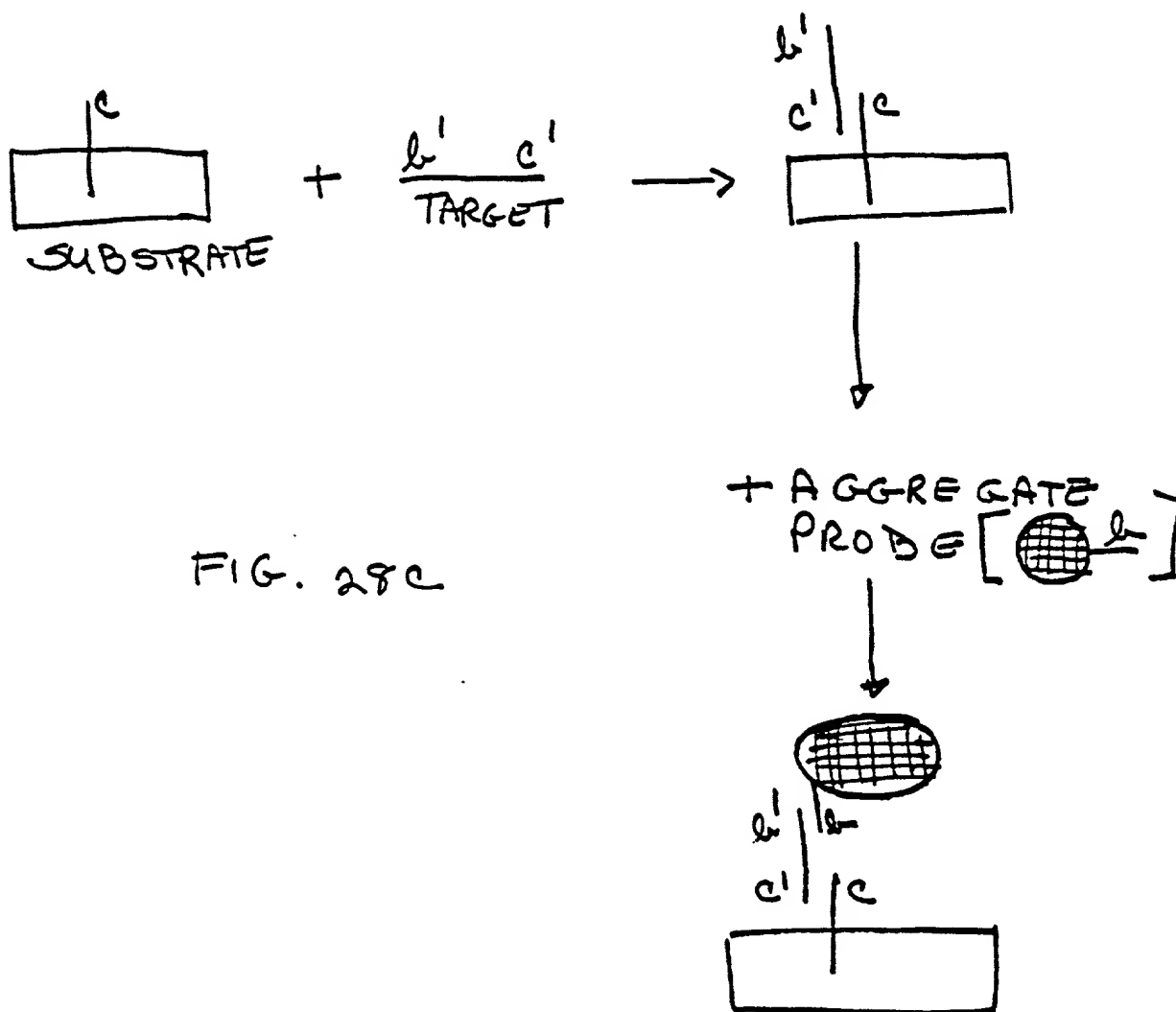
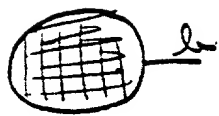


FIG. 28C

  
 AGGREGATE  
 PROBE

+  $\frac{b' \quad c'}{\text{TARGET}}$  +  $\begin{matrix} e \\ \circ \end{matrix} \text{---} d$

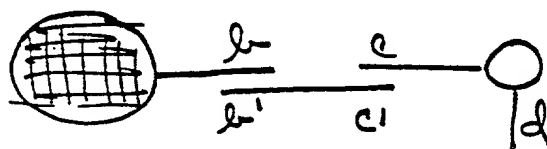

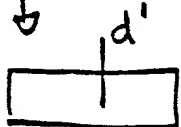
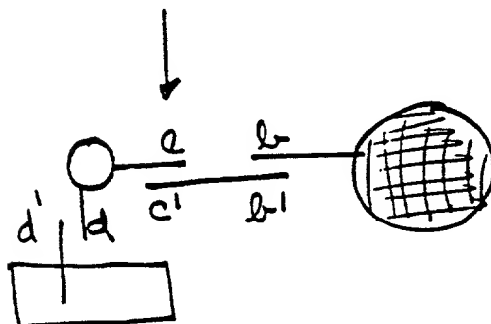


FIG. 28D

REMOVE EXCESS   
 BY CENTRIFUGATION

+  SUBSTRATE





06973636-101001

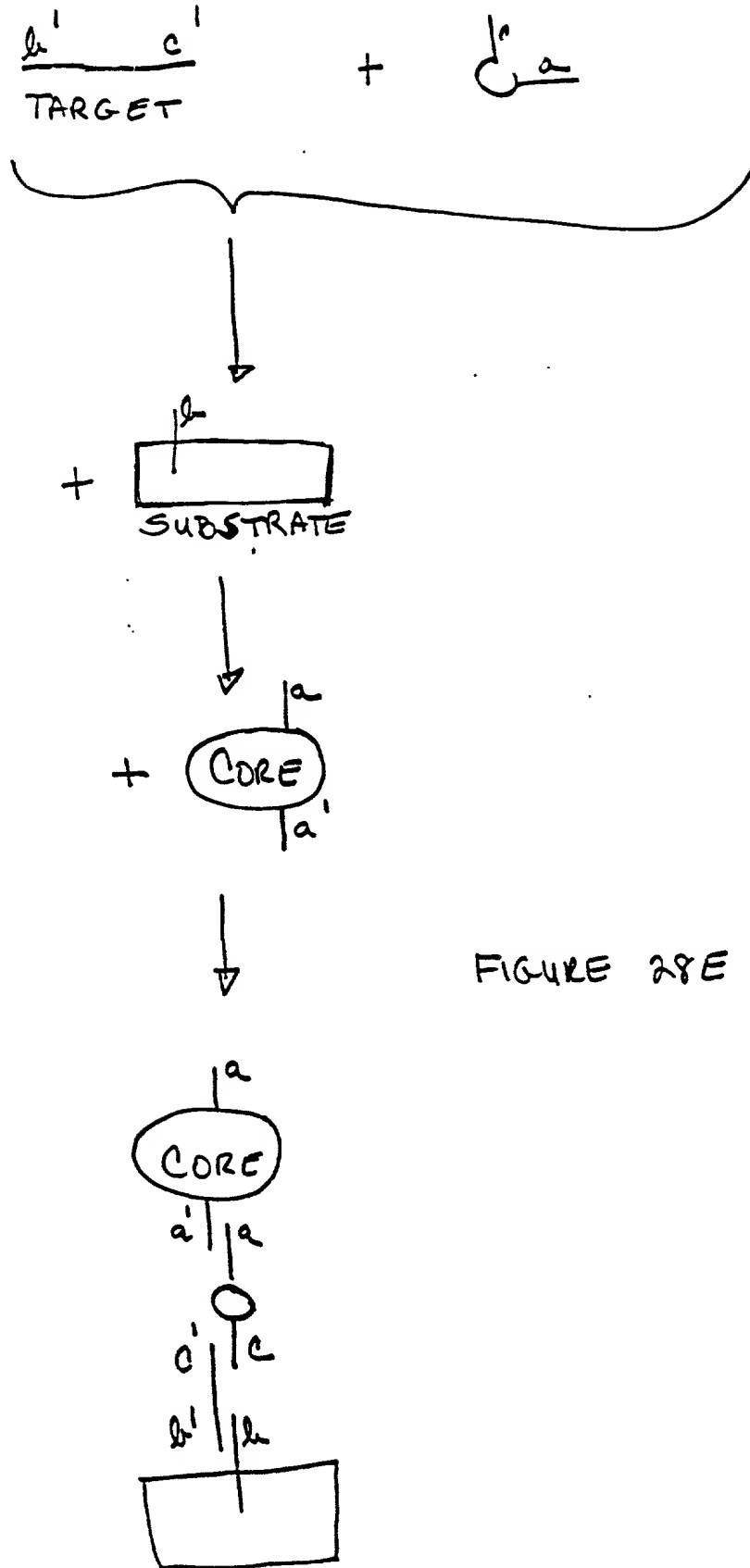


FIGURE 28E

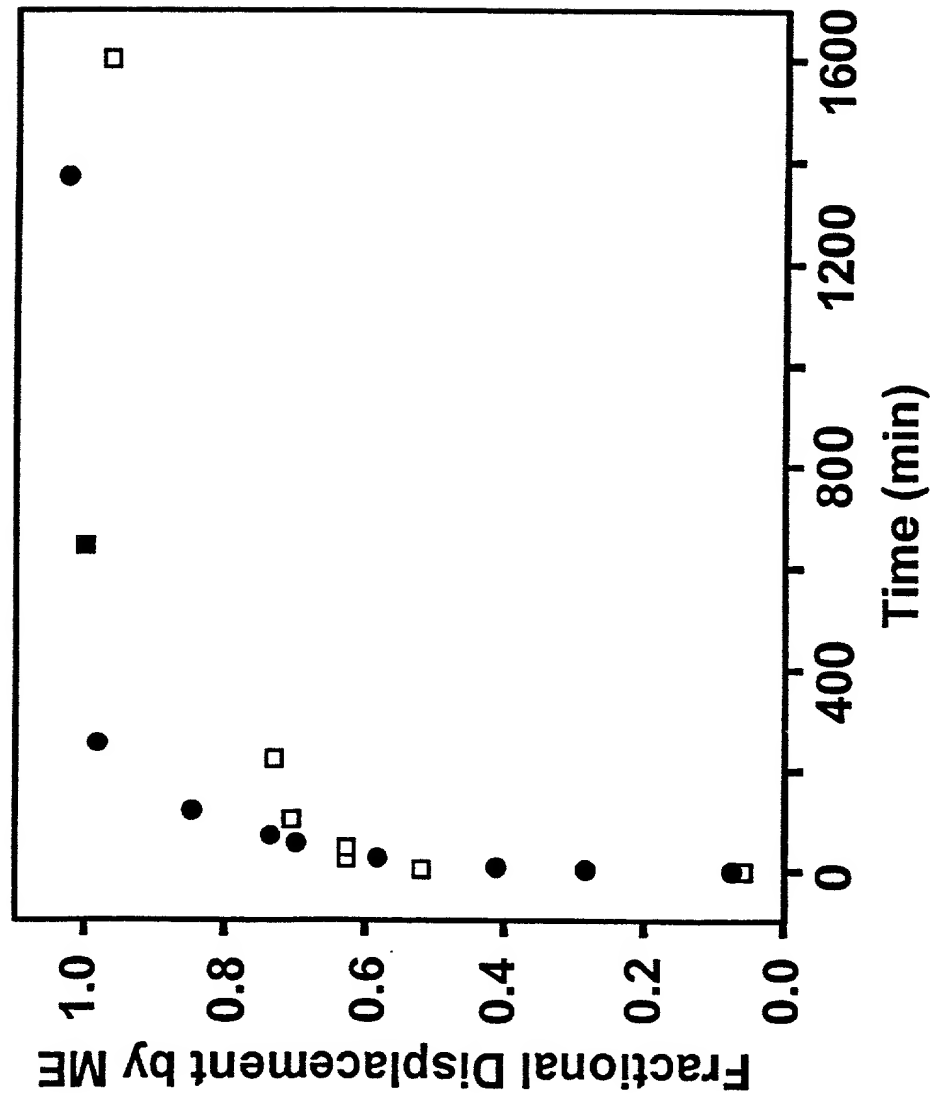


Figure 29

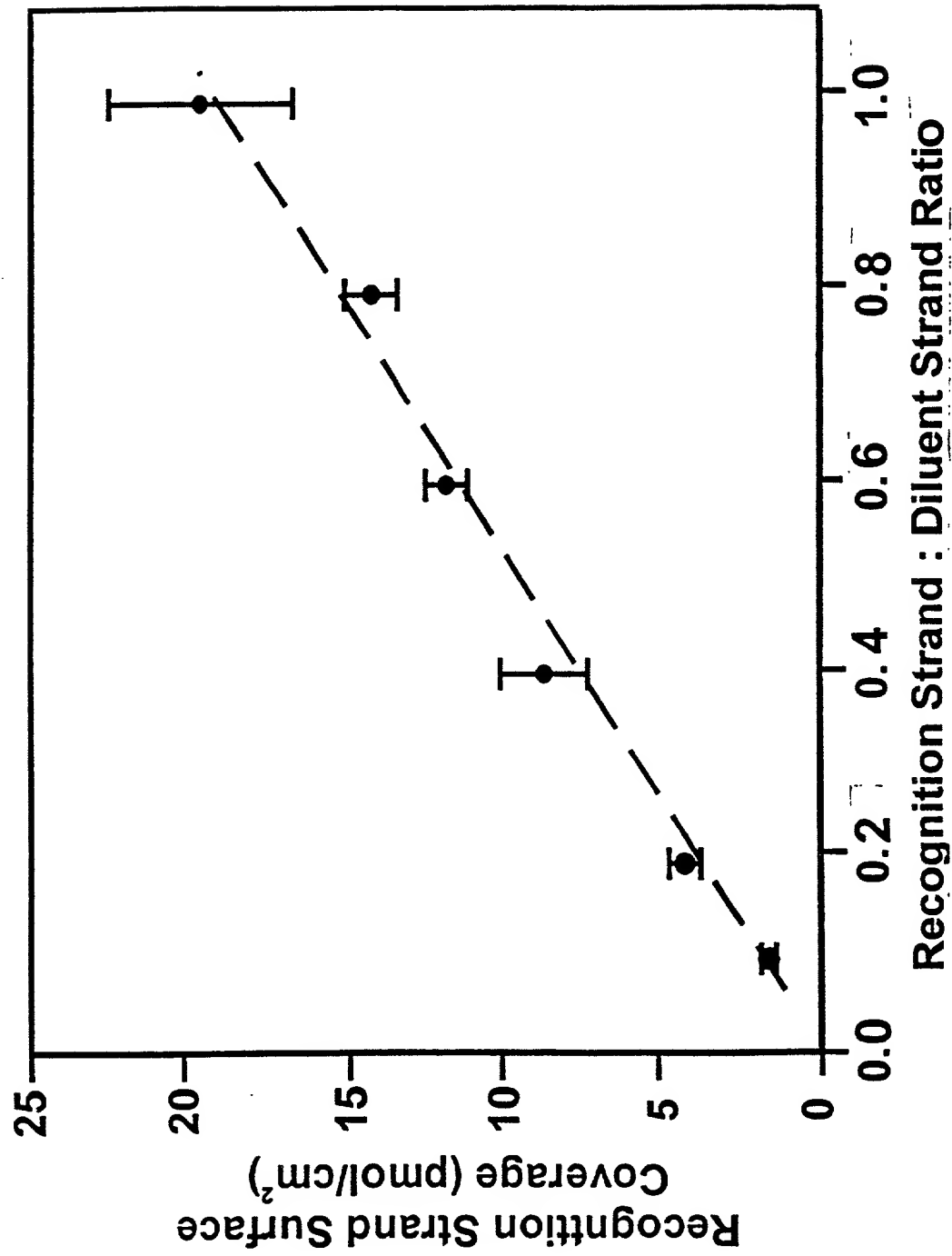


Figure 30

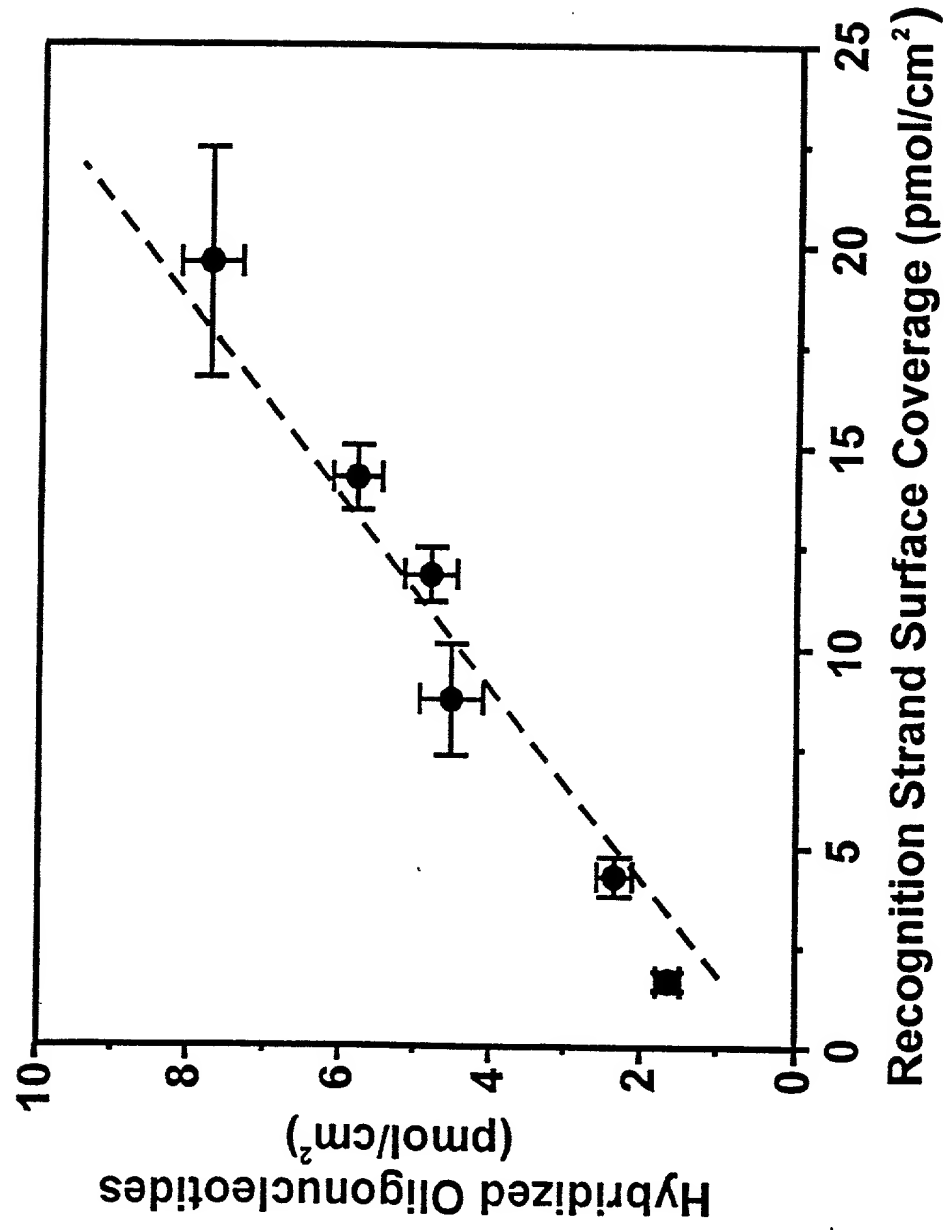


Figure 31

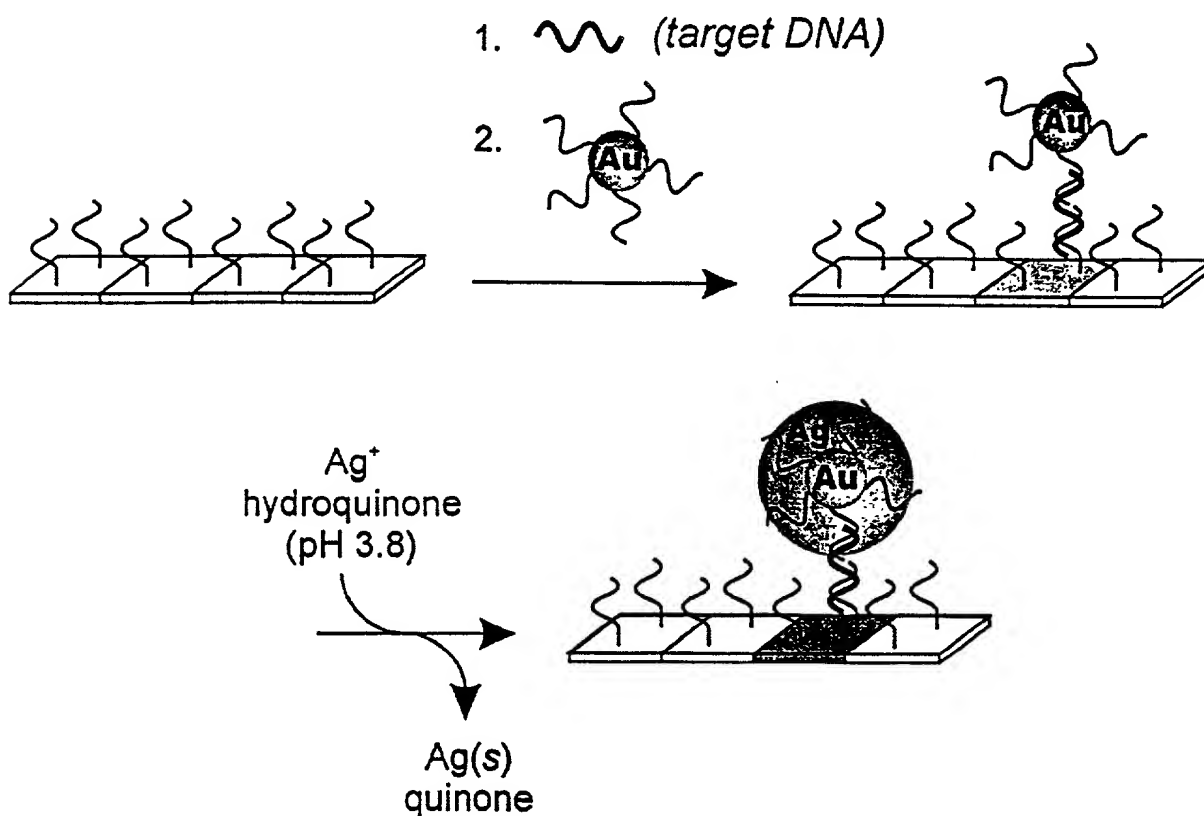
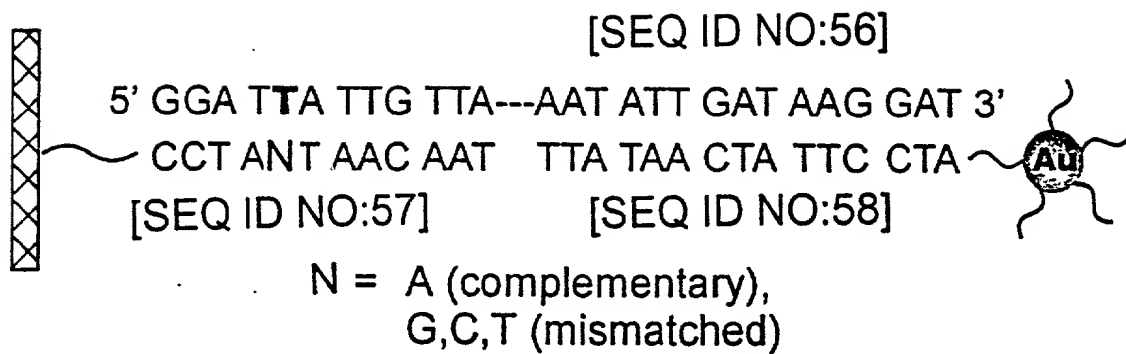


Figure 32

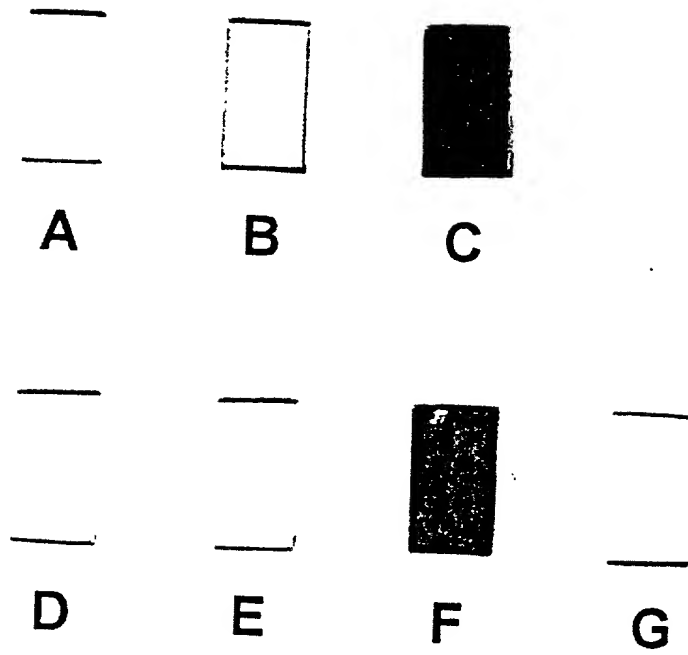


Figure 33

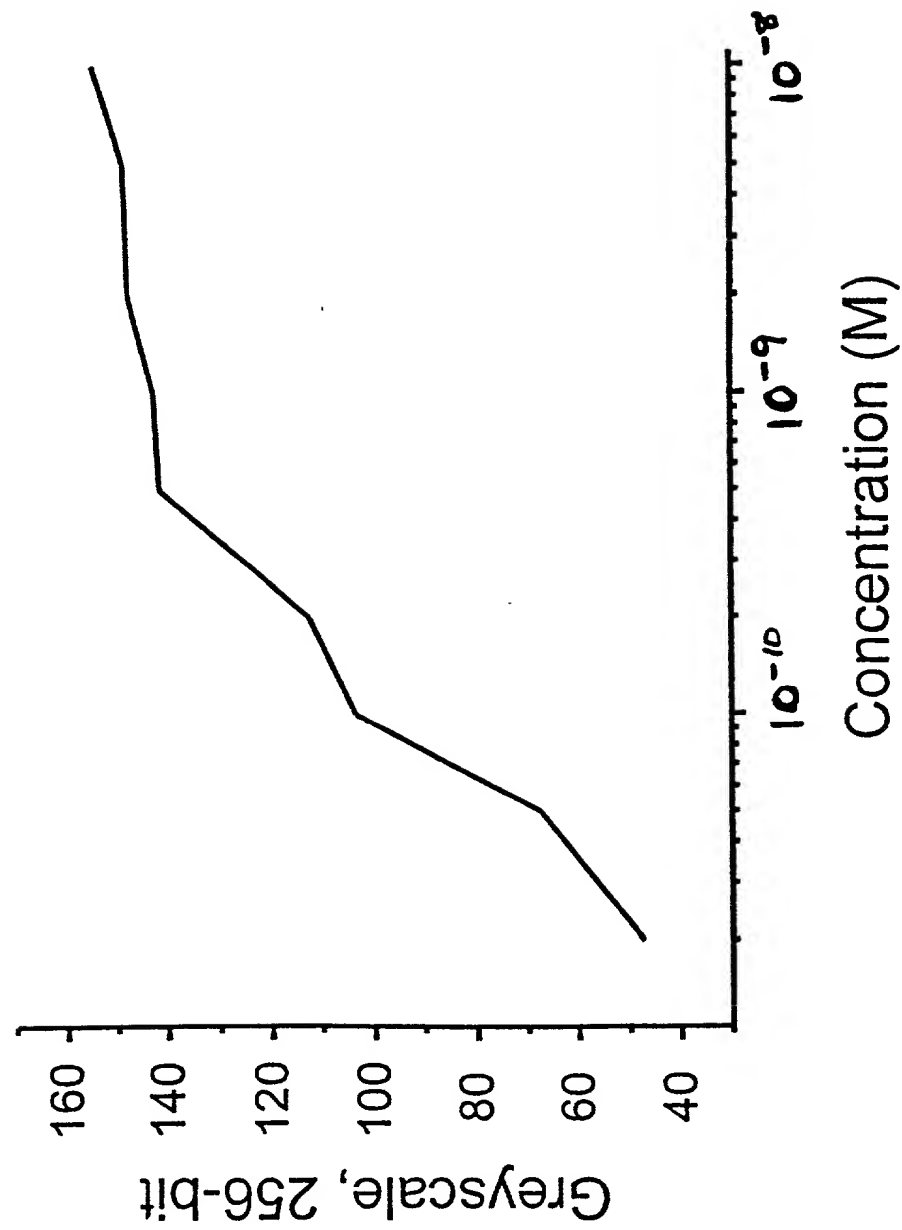


Figure 34

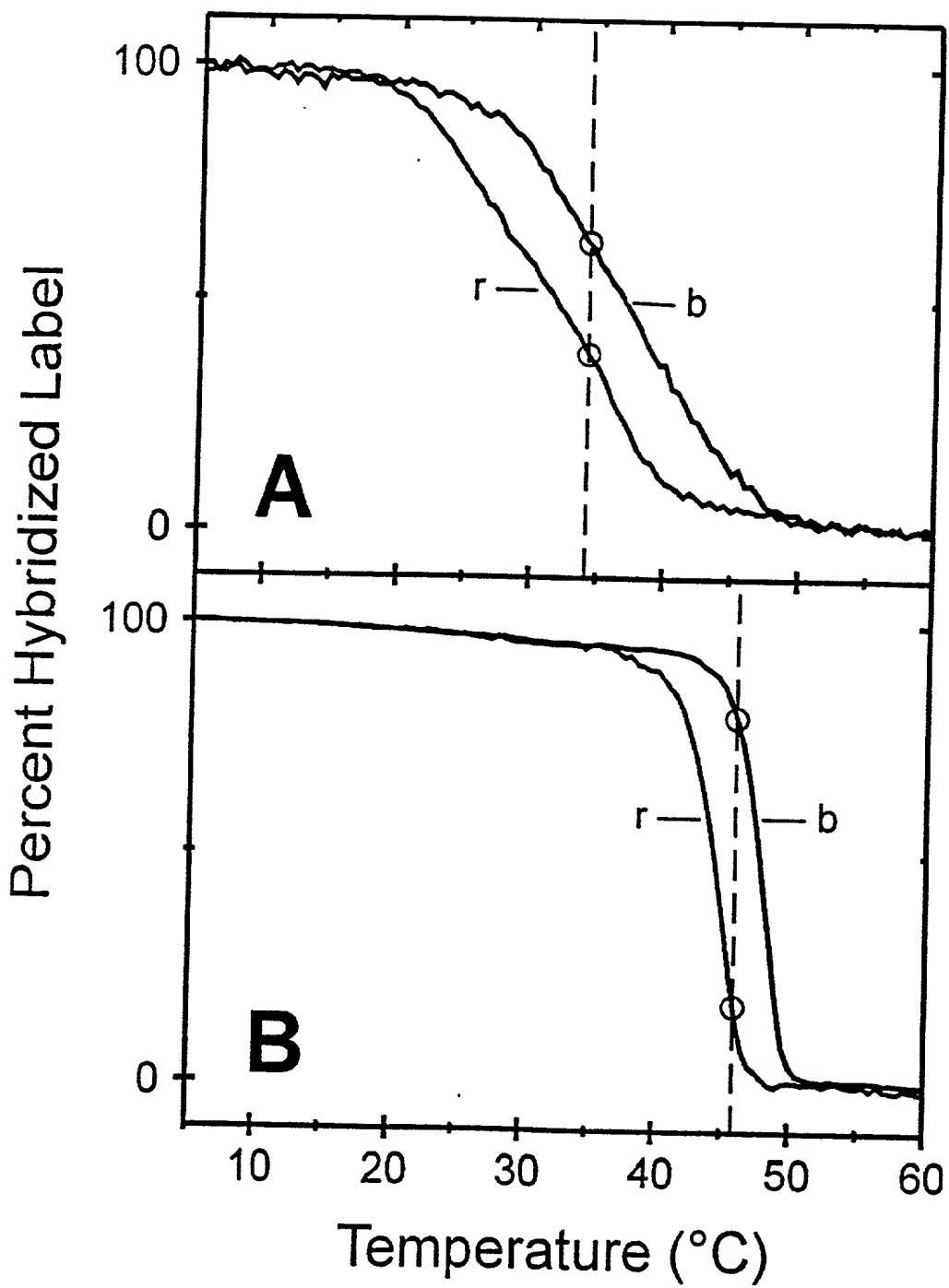


Figure 35



09973638-101001  
FOOT- BESE/660

FIG. 36A

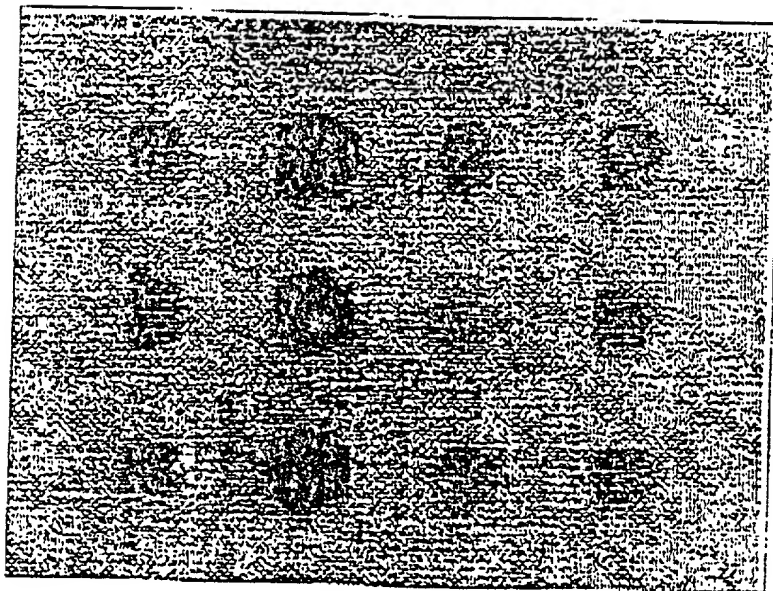
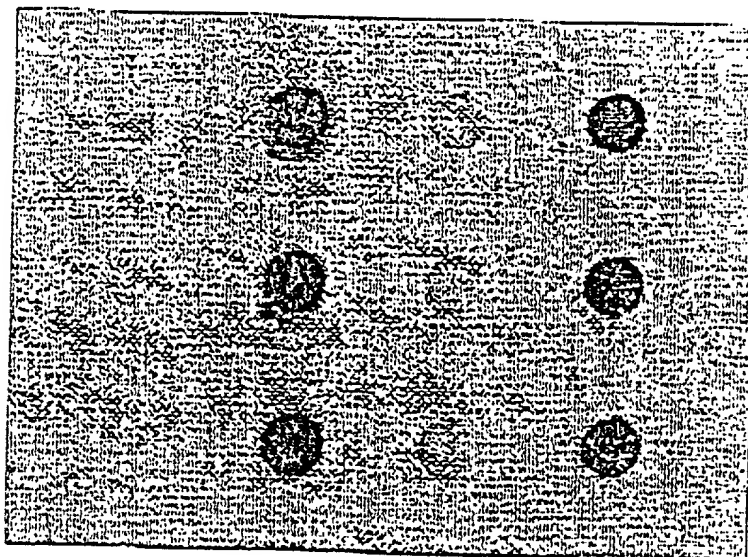
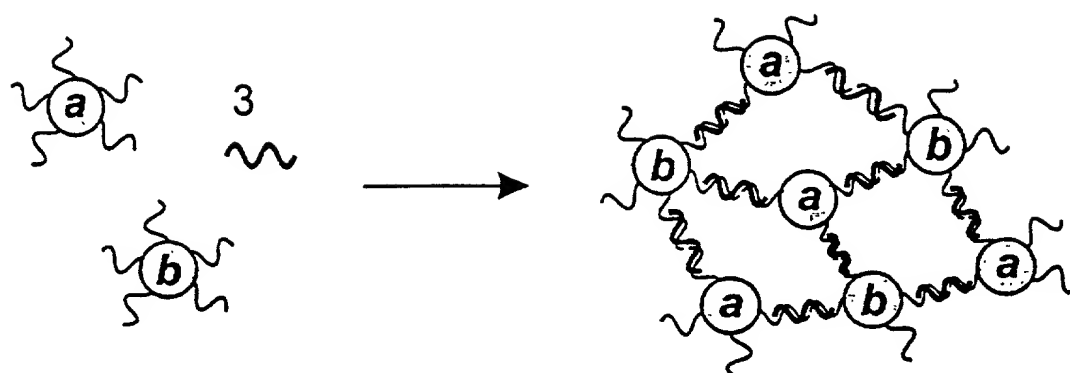


FIG. 36B



C A T G

**A**



**B**

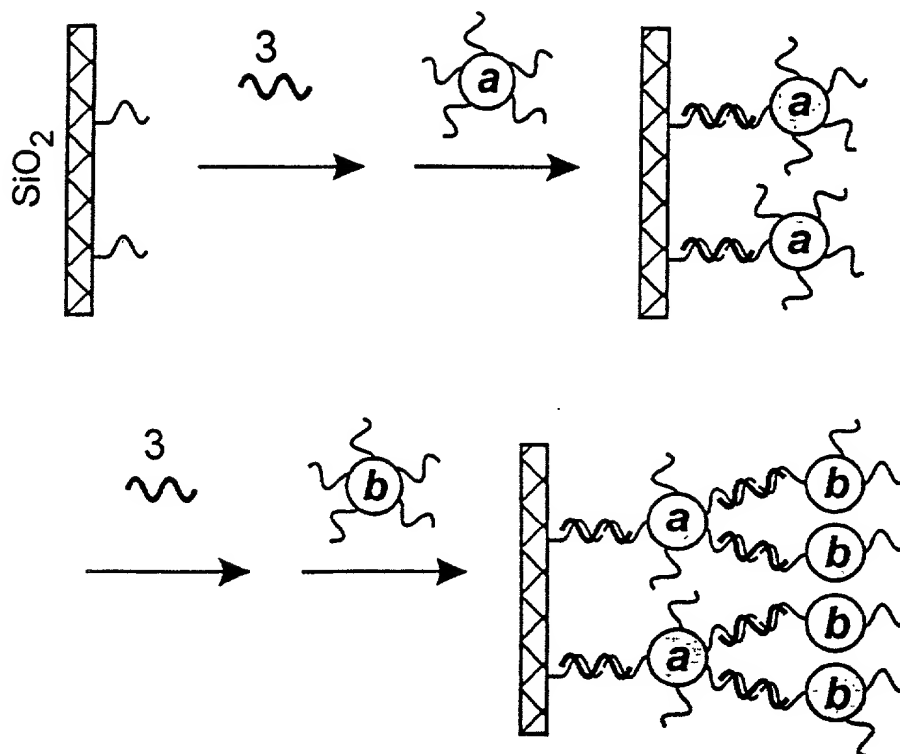


Figure 37

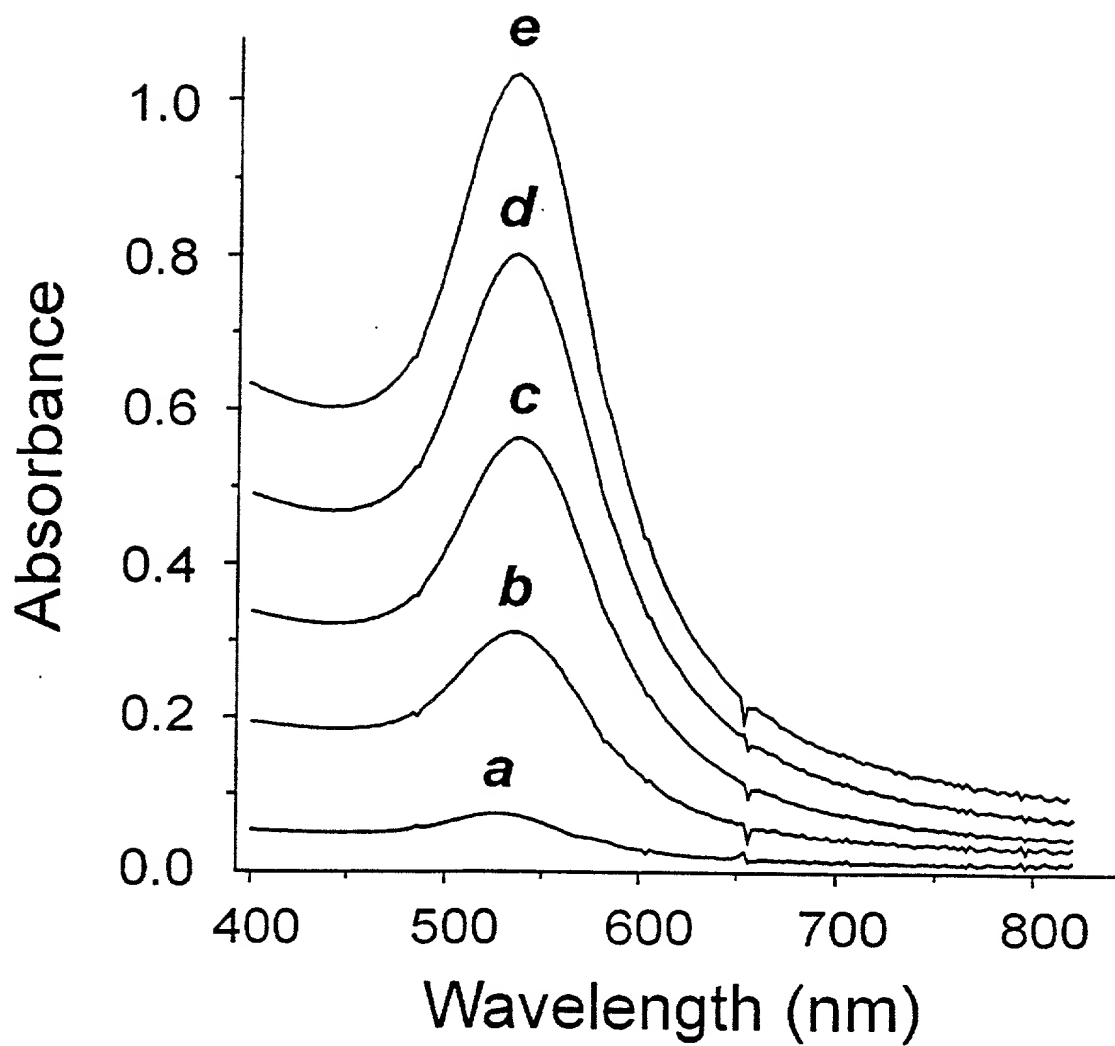


Figure 38A

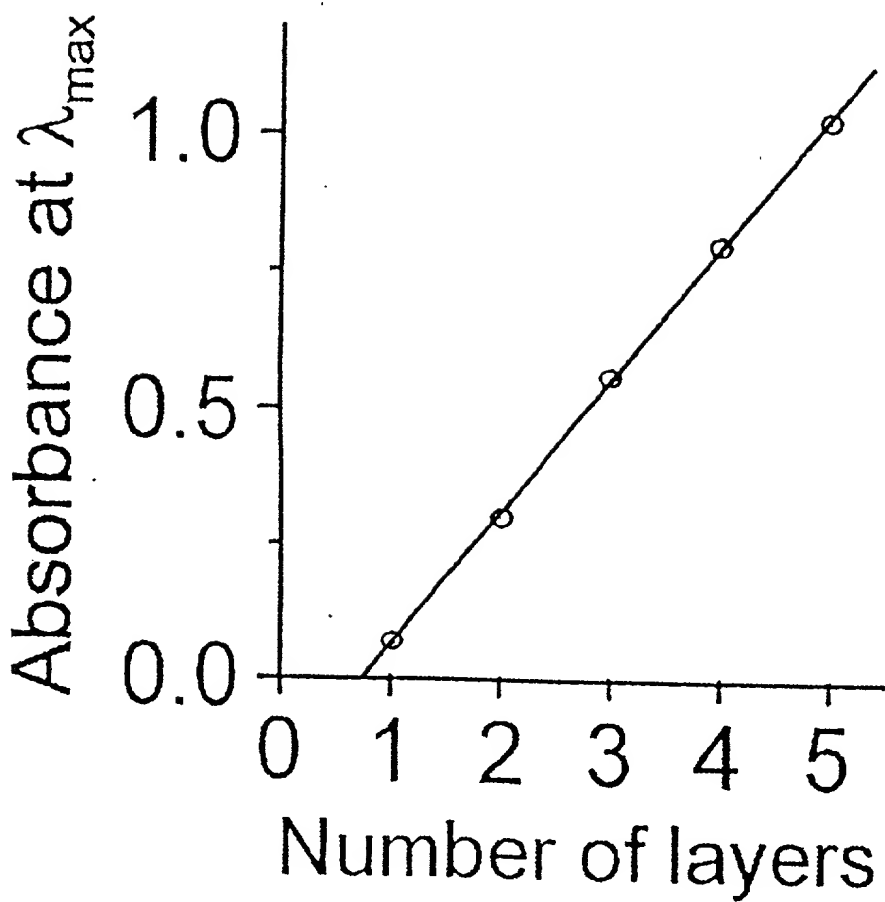


Figure 38B

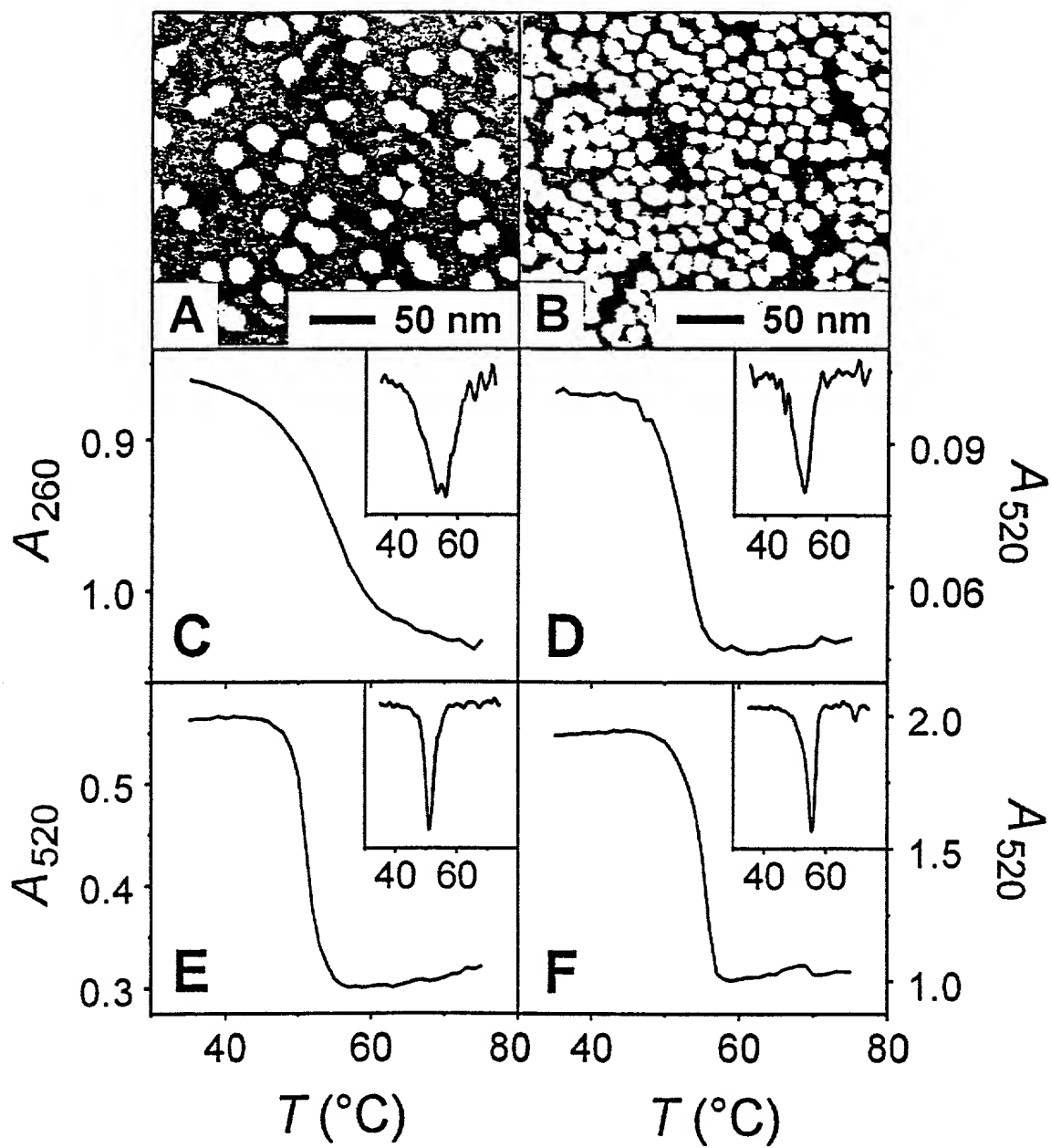


Figure 39

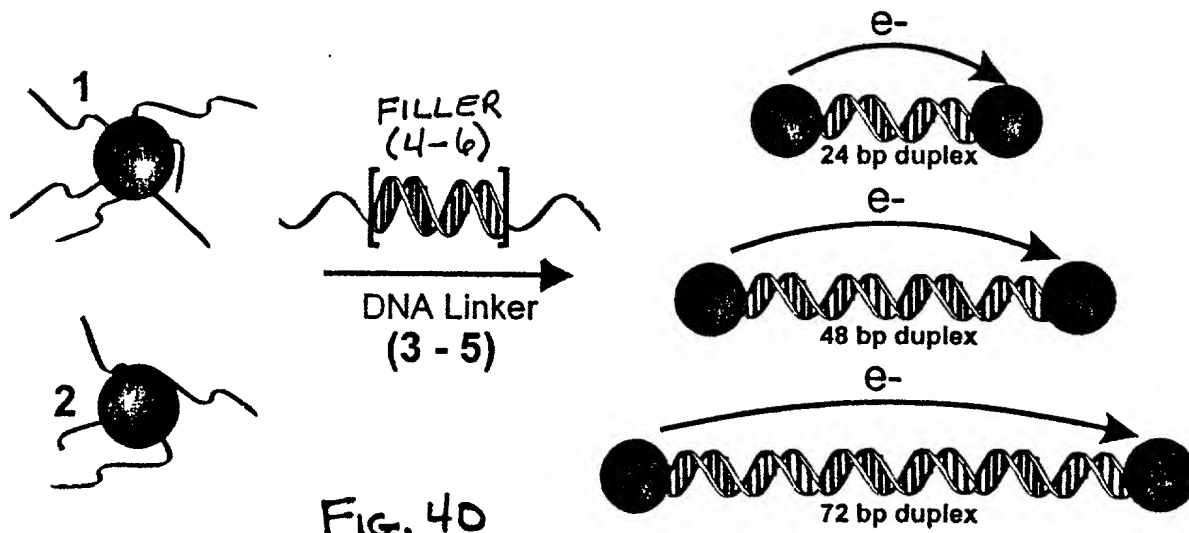


FIG. 40

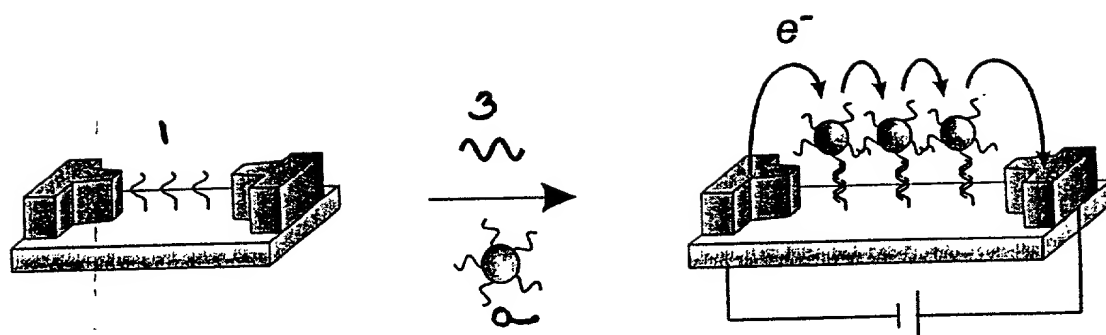


FIG. 41